The Boston Medical and Surgical Journal

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November 22, 1917

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Addresses.

WOUNDS OF THE KNEE-JOINT.[*]

By Sir Berkeley Moynihan, Leeds, England.

There is probably no department of surgery in which greater changes have been wrought since the early days of the war than in that concerned with the treatment of wounds of the knee-joint. When I was first in France in November, 1914, the majority of the cases of wounds of this joint exhibited, by the time that a base hospital was reached, a grave suppurative arthritis; very often the patient was extremely ill, with a high temperature and all the evidences of a severe constitutional infection; and in a large number of cases only the most drastic procedures offered any hope that the limb might at last be saved. Too often, perhaps, we failed to remember that a man had two legs, and only one life, and conservative measures were pushed to excess. In the work of the French army, as I saw it, amputation was in such circumstances often advocated and practised forthwith; and there can be no doubt, I think, that though some limbs were sacrificed which continued care might have saved, many lives were rescued that would otherwise have been jeopardized or lost.

By degrees, however, as our grasp of surgical principles grew firmer, and as transport facilities increased, cases were obtained earlier, a more direct and deliberate attack was made upon the wounds, and results began rapidly to improve. It was quickly realized that all methods of treatment of a well-established purulent arthritis were miserably inefficient, and that here, as elsewhere, every effort must be directed to such a precocious and drastic treatment of the wound as would prevent the development, never long delayed, of an infection. It was felt to be insufficient so to treat a limb as to save it only with a stiff joint; the aims must be both to save the member and to preserve the freedom of movement in the damaged articulation.

For purposes of academic description, the following classes of injury may be recognized:

1. *Cases of clean perforating wound of the knee-joint by rifle bullet.* There are cases in which a rifle bullet traverses the joint from side to side, often without inflicting any damage, or the most trivial damage, to the bone. In other cases the bullet, or a shrapnel ball, may have entered the joint and have lodged in the lower end of the femur, or in the upper end of the tibia. The wound or wounds inflicted may be small. They are rapidly sealed up, and present no evidences of inflammatory reaction. The joint may, or may not, fill gradually with fluid during the next few days. If fluid forms and is removed, it is commonly found to be sterile. In such cases conservative methods are fully justified by the results. The joint must be perfectly immobilized, and the patient retained if possible at the clearing station, so as to avoid the disturbances often inseparable from travel. Aspiration of the fluid, and the injection of formalin and glycerine, formerly often practised, do not seem to insure or to hasten the recovery.

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[*] Read before the Clinical Congress of Surgeons of North America, in Chicago, on Oct. 23, 1917.

2. *Cases of penetrating or perforating wounds of the joint with a larger aperture of entry, or of exit, or both, when the projectile is retained in the joint.* All such cases must be submitted to operation. The limb, which should be immobilized at the field ambulance, is kept absolutely at rest until an x-ray examination is made. This is indispensable; under no circumstances may a blind exploration of the joint be made in the hope that the missile, if any, or if many, may be discovered and removed. The surgeon must know beforehand the conditions he will probably meet, and must deal with them purposefully and deftly.

The position and size of the projectile being ascertained, the track of the missile must be determined. The position of the limb as it lies on the splint is, of course, hardly likely to be that which it had when the wound was inflicted.

After the whole limb has been thoroughly prepared in the usual manner, certain definite objects must be pursued. The wounds and the track of the projectile must be excised; missiles must be removed, all foreign bodies, fragments of clothing taken away and such damaged and loosened fragments of bone sacrificed as may appear to be necessary. The technic of wound excision is the same in these injuries as in others; the damaged skin and all the bruised and lacerated track down to and including the synovial membrane are removed, if possible, in one piece. A preliminary sterilization of the track with the actual cautery is an undoubted advantage. How precisely the incision is to be made will depend upon the exact circumstances. A good rule for the surgeon in all his technical responsibilities is that he should see well what he is doing and do well what he sees. These should be endeavors in the knee-joint especially. To make a small incision, and to introduce his finger to "explore" the joint, which may mean to grope blindly and clumsily therein, is not in accord with the needs of cases such as these. A quite adequate exposure is necessary. If this can be obtained by an enlargement of the aperture of entrance, or exit, or of both, nothing more is required; if it cannot, then a long internal or preferably external incision is made; if these are insufficient then the surgeon must make up his mind to a sacrifice of the ligamentum patellae and the making of the semicircular flap fashioned in many cases of excision of the knee, and this must be done. By the time the patient is ready to use his limb the ligament will have united firmly and be competent to bear the strain then placed upon it. There can be no doubt, however, judging by the cases I have seen, that the functional result in all returns more slowly and always less perfectly than in those where only the lateral incisions are made. A free and full exposure of all the injured parts being then obtained, the following injunctions may be observed: to remove all dead tissue, to remove all soiled parts, to remove all foreign bodies, clothing, mud, clots, etc.

How strictly is the surgeon to interpret the rule that all projectiles must be removed? Our experience in England shows beyond dispute that (*a*) if a projectile is embedded in the articular ends of the bones, when the bone has suffered little or no damage beyond that necessarily inflicted by the entrance of the foreign body, it becomes encapsulated and rarely, if ever, gives rise to subsequent trouble, and (*b*) if a projectile, however small, remains in the knee-joint, it is an abiding source of infection and of suppurative arthritis. The most troublesome and tedious of all the cases seen at home are those in which a foreign body has been left in the joint. It is, therefore, a strict and necessary injunction that all projectiles should be removed at the earliest opportunity. All vessels bleeding ever so slightly along the wound are carefully secured. The wound and all parts exposed are gently wiped, and if the surgeon so desires, some form of antiseptic may be used,—ether, or Dakin's solution, or saline solution. The wound is then closed by layer after layer of catgut sutures until the skin is reached. For this, silkworm-gut is used.

Is drainage to be used? In the early months of the war drainage tubes were freely, indeed almost universally, employed. Sir Anthony Bowlby, however, has often emphasized their very real disadvantages. Unlike most surgeons, I believe, he had for many years in civil practice forbidden their introduction in all cases under his care. He has now won all opinion round to his view. There can be no longer any doubt that any form of tube introduced into the joint cavity in these early cases is productive of nothing but evil. Tubes damage the synovial membrane by their pressure, and are a potent and abiding avenue of infection. As a binding obligation, with no objections worthy of consideration, it may be asserted that tubes should never be placed within the joint. It is rare to see in the base hospitals in England, a movable knee-joint when tubes have been used within the cavity. Drainage, however, may be necessary, and is quite inadequately secured by placing tubes "down to but not into" the joint and by leaving a gap in the line of the sutured synovial membrane. The delicate tissue of the synovial membrane then suffers no harm, yet if effusion occurs it finds a ready exit and easy escape to the surface. Dressings are then applied and absolute immobility secured for 8 or 10 days by a splint.

There are cases, probably between 10 and 15% of the total number treated upon these lines, in which an effusion into the knee-joint, larger or smaller in quantity, associated with an elevation of temperature, may occur, generally after the fifth or sixth day.

What is then to be done? This question is to be answered by the bacteriologist and the surgeon working together. An examination of the fluid discharged from the tube, or removed by aspiration of the joint, must be made forthwith. If any organisms but the streptococcus or staphylococcus are found, there is no need as yet for anxiety. In quite a number of the cases, the fluid will prove to be sterile and will leak away by slow degrees through the aperture prudently left in the synovial membrane. Day by day the temperature will fall and the knee assume once again its normal size, and all will at last go well. If, however, the staphylococcus is found, the joint must be watched almost from hour to hour. If fluid is leaking away slowly, and if the temperature tends to fall, and if the patient remains comfortable, then expectant methods may safely be continued. In the great majority of such cases, all danger will subside and the infection will be subdued by the patient's own efforts. Such cases help one to realize the strength of the defensive power that the knee-joint is capable of exercising. When, however, the streptococcus is present, active and timely interference is necessary. The joint must be freely opened by long lateral incisions or by semicircular incisions dividing the patellar ligament. The synovial membrane must be stitched to the skin, and the Carrel-Dakin method adopted. If the infection is of a still graver or more hostile kind, excision of the joint or even amputation may be imperatively necessary.

There are few types of cases, if indeed there are any, which give such genuine gratification to the surgeon practising in England as those treated in France by methods similar to those described. A very large number have now been received into our base hospitals in which, a month or six weeks after an injury that two or three years ago would have meant permanent disablement of the joint as the best attainable result, all movements of the knee are free and unimpeded and attended by no pain whatever. In no circumstances do we realize with such certainty and satisfaction the remarkable scientific advances made by our colleagues working with the army in France.

3. *Cases of perforating or penetrating wounds of the joint with intra-articular fracture.* This condition is a degree more serious than that in which the missile has cleanly entered and become firmly embedded in the end of the femur or the tibia. There is here a shivering of the articular ends with many irregular lines of fracture. In the midst of a soft mass of crushed bone, the projectile may be lying. All such cases must be dealt with ruthlessly. There must be adequate exposure by one or other of the incisions before mentioned; all dead, severely damaged, or entirely loose fragments of bone taken away, the curette or the bone forceps being used to get rid of all bone which is beyond hope of recovery. As a rule, the distinction between sound and doomed bone is easily made. The articular cartilage is, however, always dealt with most sparingly. The future integrity of the joint movements depends upon the preservation of every scrap of this structure.

It will often be found that an injury which before free exposure has appeared trivial is seen, when the joint is opened up, to be very extensive and to require careful and long-continued toilet before all parts are cleansed and removed. It may be necessary once or twice to change instruments, gloves, or towels, in the due observance of the strict aseptic ritual always necessary. When all parts are cleaned, the most perfect hemostasis is secured and the wound then closed.

In many cases in England, we have used Morison's paste (Bipp) to smear over the rough osseous surfaces which remain or over a bruised or inflamed synovial membrane. I have seen several cases of severe infection of the knee treated by Mr. Morison himself, and have been surprised some weeks later to see what a remarkable degree of functional restoration has been obtained. It is in these severer forms of injury to the knee-joint that we have by degrees been brought to realize that our old timidity towards this joint is quite needless. It is no exaggeration to say that with proper care the knee can protect itself from infection almost as well, if not quite as well, as the peritoneum. Our fear of infections within the joint were due to an ignorance of the methods of treatment of them. Most surgeons dealing even with a mild infection, and probably all surgeons dealing with anything approaching a grave infection, relied upon drains introduced into the cavity of the joint to rid the parts of inflammatory products. We know now that nothing but harm comes from a drainage tube placed into the joint. If drainage is necessary it is secured by tubes down to the synovial membrane, but not within it, by suturing the synovial membrane to the skin, or by adopting, as Mayo Robson suggests, a special posture of the limb.

4. *Cases of injury to the knee-joint, with extensive fracture of the articular ends.* The practice to be followed in such cases will depend upon the position and extent of the injury, the number and localization of the projectiles, and the degree of infection. If there is extensive fracture without loss of tissue, it is probable that an attempt to save the knee will be worth while; that even if ankylosis results, the firmness and strength of the limb will be adequate to most purposes. When, however, there is extensive localized loss, as, for example, when one condyle of the femur is blown completely away, then a formal resection of the knee-joint forthwith is probably the best course. In such a case, even if complete healing takes place, the functional utility of the limb is greatly hindered by those deformities which inevitably follow. As much of the femur must be saved in making the resection as can with safety be left, the upper end of the tibia, if intact, must have only the merest shaving of the articular

cartilage excised, that is, enough to allow a bony ankylosis to take place. The amount of the two bones that can be removed without serious disablement is remarkable. I have had one patient whose leg was a trifle over four inches shorter than the other, who walked with vigor and not inelegantly. A part both of the femur and of the tibia had been destroyed by a shell fire.

In cases included in this group where infection has obtained a hold, the method of excision introduced by Colonel Fullerton may be practised. Instead of bringing the opposing ends of the femur and the tibia together, means are taken by extension to keep them apart. A wide gap then is left which may be filled lightly with gauze and the Carrel-Dakin method of treatment adopted. When the wound has reached the stage of "clinical sterilization" the bones may be fitted together and the limb fixed in a splint.

In still more severe types of injury amputation of the thigh is performed without delay. This counsel is especially urgent when the great vessels also are injured, when laceration of the soft parts is extensive, and when infection, especially with the bacillus of gas gangrene, is evident.

CONCLUSIONS.

1. In all cases of wounds of the knee-joint, the limb should be fixed immovably upon a splint at the earliest possible moment, and until circumstances and surroundings permit of a complete operation.
2. At the casualty clearing station, or other operating center, an x-ray examination is made in all cases. The whole limb is then prepared for operation.
3. The following are the essential features in all operations: excision of the wounds and of the track of the projectile after preliminary sterilization by the cautery or otherwise; a free exposure of the joint either by enlarging existing incisions or by long internal or external incisions or by the formation of a flap by division of the patellar ligament.
4. All foreign bodies must be removed from the joint. Even the smallest piece of clothing or of metal may be the nidus of a continuing infection.
5. The wounds are closed in layers by catgut sutures. Drainage is secured by leaving a gap in the line of suture of the synovial membrane, or by leaving a tube close "down to but not into" the joint.
6. Drainage tubes are never placed within the joint cavity. They do not drain the joint, they are harmful in their effects upon the delicate synovial membrane, and they are often a channel by means of which infection is conducted to the joint.
7. In cases of severe infection of the joint by staphylococcus, or especially by the streptococcus, the wounds must be reopened, the synovial membrane stitched to the skin, free drainage of the joint secured, and the Carrel-Dakin or other method of progressive sterilization of the wound adopted. In more severe cases, with an infection rapidly gaining ground, excision of the joint may be necessary.
8. In cases of severe comminution of the articular ends with much loss of substance (the whole of one condyle, for example), a resection of the joint is performed forthwith.
9. In severe and extensive wounds with heavy infection, the method of resection with wide, temporary separation of the ends of the bones (Fullerton) should be practised.
10. In cases of very extensive damage, especially with infection, amputation is desirable.

THE FOUNDING OF THE BERKSHIRE DISTRICT MEDICAL SOCIETY, WITH NOTES ON THE FIRST PERIOD OF THE EXISTENCE OF THE MASSACHUSETTS MEDICAL SOCIETY.*

BY WALTER L. BURRAGE, M.D., BOSTON.

AT the one hundred and tenth anniversary of the founding of the Berkshire District Medical Society, one of the oldest component units of the Massachusetts Medical Society, it is fitting that we search the records of the past to learn how the organization of such a strong and enduring society came about, and something as to the character and achievements of the founders, those hardy idealistic pioneers who could truly say, "We look to the hills, whence cometh our strength."

We find in the old minutes of the council of the Massachusetts Medical Society the following entry: "At a meeting of the Counsellors holden at Vila's Hotel, Boston, on Wednesday, the 7 day of October, 1807, a petition was received from certain members of the Society in the county of Berkshire, asking leave to establish a district society in that county, to comprehend all the towns in that county. *Voted,* That the prayer of the said petitioners be granted." Curiosity is aroused at once to learn who were the "certain members," and reference to the Charter Book, so called, in which besides the original charter of the society were entered the names of all new fellows, reveals the following list of eight men from Berkshire County in the order in which they became fellows:

1785	Erastus Sergeant, Stockbridge.
1801	Hugo Burghardt, Richmond.
1803	Timothy Childs, Pittsfield.
1803	Remembrance Sheldon, Williamstown.
1803	Eldad Lewis, Lenox.
1803	Oliver Brewster, Becket.
1804	William Buel, Sheffield.
1804	Horatio Jones, Stockbridge.

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* Read at a meeting of the Berkshire District Medical Society in Pittsfield, Mass., Aug. 30, 1917.

These comprised all the fellows in Berkshire at that time, William Whiting of Great Barrington, first president of a "Medical Association" in Berkshire in 1787 and one of the thirty-one incorporators of the Massachusetts Medical Society in 1781, had died in 1792, and Oliver Partridge of Stockbridge, who had joined the society in 1785 and had been secretary of the above-mentioned association, had resigned on the reorganization of the parent society in 1803. Thus we see that six of the original ten fellows of the society previous to the year 1807, had joined after the passage of the act of the legislature amending the charter.

The records tell us that forty councilors were appointed by the society June 1, 1803, and that Berkshire was allotted one, Erastus Sergeant. The next year the number of councilors was increased to forty-four, and Berkshire was represented by Erastus Sergeant, leading surgeon of Stockbridge, and Timothy Childs, chief practitioner of Pittsfield, and these same men represented the district in 1806, the year before the foundation of the district society.

Twenty years earlier, a medical association, the precursor of the Berkshire Medical Society, had been organized at Stockbridge, following a vote of the Massachusetts Medical Society at its October meeting, 1785, appointing Dr. Sergeant and Dr. Partridge a committee for Berkshire "for the purpose of encouraging the communication of all important or extraordinary cases that may occur in the practice of the Medical Art, and for this purpose to meet, correspond and communicate with any individuals or any Association of Physicians that have been or may be formed in their respective counties and make a report from time to time of their doings to this society as occasion may require." Fifteen physicians attended the first meeting of this medical association at Stockbridge, January 16, 1787, among them besides Dr. Sergeant and Dr. Partridge, being William Whiting, Oliver Brewster and Eldad Lewis. According to their minutes, they met "to form an association for the purpose of observing and communicating those things which may be for the improvement of the art of physick, and of encouraging a spirit of union with those of the Faculty, and of rendering the Faculty more respectable." What a vogue the word "respectable" had in those days! No one was properly born unless of "respectable parents."

William Whiting was the first president; Oliver Partridge, secretary; and Eldad Lewis, orator. There can be no question of the high purpose of those founders and that they were accustomed and ready to overcome obstacles of climate and difficult transit facilities—there were no railways, few roads and many paths—in order to hold their meetings and to advance the standards of the practice of medicine. The second meeting was held in May with an attendance of seven, and the third in June, fourteen being present, and Timothy Childs was one. To show the aims of the founders and to bring home to us the oratory of the time it may not be out of place to cite a few extracts from Eldad Lewis' oration on "The Usefulness of Medical Societies," delivered before the fourteen members of the Medical Association of the County of Berkshire, gathered at Mr. Bingham's in Stockbridge on that twelfth of June, 1787, and carefully recorded by vote in the old record book of the society wherein all the minutes were entered from 1787 to 1864. This book is the source of our information concerning the Berkshire society and is now in the possession of the Berkshire Athenaeum in Pittsfield.

After lamenting the lack of medical schools, hospitals and opportunities to study medicine in this country, Dr. Lewis says: "A society of physicians united upon liberal principles offers a fine opportunity for improvement from the communications of the several members; important incidents occurring in private practice will by this means be rescued from oblivion, talents will be stimulated to exercise, which otherwise might forever have lain dormant and useless, or there will be the greatest and most noble excitements to a laudable emulation and industry. Opportunities also will often present of habituating ourselves to observe accurately, to think justly, to reason truly and analogically and judge with precision." And again: "The natural history of our country is a subject that has been but little cultivated hitherto, for which reason, as well as from its extensive usefulness, it demands our highest attention. Intimately connected with which and more directly subservient to the Profession are the botany and pharmaceutica of indigenous vegetables. No part of the world is more fertile in efficacious drugs than the territory of the United States; to many of these the physicians of other countries are entire strangers, while we ourselves are shamefully ignorant in these matters."

Dr. Lewis hoped that the "association" might control the quacks, at that time a great menace to the community. He said: "It will undoubtedly be in our power, when properly organized, to hinder the illiterate medicaster and ignorant quacks from introducing themselves into the practice, to the danger of the lives of the sick and the injury of the deserving physician." This excellent oration closed with a plea to the members to elevate the pharmaceutical standards of the druggists and to stand together for the public good, to concur in all measures calculated to abolish all odious distinctions and ill-natured competitions among the faculty and to cultivate confidence and harmony in the profession.

The Berkshire Medical Association met again in January, 1788, and admitted five new members, but because of the rebellion led by Daniel Shays and the troubled state of the country there were no further meetings until 1794. In that year, on November 12, fifteen members met at Stockbridge, officers were elected and three censors were chosen. At another meeting, January 6, 1795, the by-laws were revised and signed by fifteen members, including Erastus Sergeant, Eldad Lewis, Oliver Partridge, Horatio Jones, Oliver Brewster, Hugo Burghardt and William Buel. There were two more meetings in this year and two in 1796; then follows a great silence, and the next record is "Lenox, July 1, 1819," thirteen years later. There are no records at all of meetings held in 1807 and in the succeeding years. Search through the records of the council of the parent society from 1807 to 1819 shows that new fellows residing in Berkshire were admitted from time to time, but there is no specific reference to the district until February 4, 1818, when this entry occurs: "A petition having been presented by Hugo Burghardt and others, Fellows of this Society residing in the County of Berkshire, requesting permission to constitute a district society by the name of the Berkshire District Medical Society, and to hold their meetings in the town of Lenox. *Voted*, That the prayer of the said petition be granted." Thus the Berkshire society was born again, and regular meetings have been held and regular records kept since July 1, 1819.

At first the society voted not to accept the charter as granted by the parent society, but at a meeting held May 4, 1820, the charter was adopted. Previously a special committee of the Council of the Massachusetts Medical Society had been appointed, on application from the Berkshire society, to consider whether that society might be granted allowance from their membership fees to defray their expenses. The committee reported to the annual meeting of the Society in Boston, June 3, 1818, recommending that the treasurer of the Berkshire District Medical Society be empowered to collect all membership dues for his district for five years and to return half of the amount collected to the treasurer of the state society. The report was adopted in spite of the fact that two similar requests from the Worcester district society, 1808 and 1816, had been denied by the Council, and the concession must have been of assistance.

In 1821 the Berkshire society was well reestablished, every subsequent meeting was duly recorded and the by-laws were revised and signed September 13, by the following twenty-seven members, who may be regarded as the founders of the present régime:

Asa G. Welch
Henry H. Childs
Worham L. Fitch
John L. Barker
Platt B. Tyler
Hugo Burghardt
Eben Emmons
Robert Worthington
Daniel Collins
George Hill
Alfred Perry
Philander H. Thomas
Henry L. Sabin
Hubbard Bartlett
Millen Sabin
Erastus Sergeant
Luke Dewey
Asa Burbank
Vassel White
William H. Tyler
Charles Worthington
Abner Sears
Enoch Peirce
Selden Jennings
Lyndon A. Smith
Royal Fowler
Coridon Guiteau

In this manner came about a third founding of the society,—the first in 1787, the second in 1807, and the last in 1818-20. Under the auspices of the society the Berkshire Medical Institution was to start within three years (1823) on its long and honorable career in Pittsfield.

In the year 1807 the Massachusetts Medical Society had 160 active and retired fellows. At this time the relatively populous Worcester and Essex Southern districts had in their membership 22 and 20 fellows, respectively. They had been organized in 1804, and were the only district societies formed previous to the Berkshire society.

It may help to an understanding of the situation in 1807 to sketch the conditions under which the parent society had sprung to life under the charter that was approved by the governor, November 1, 1781, just after the surrender of Cornwallis at Yorktown, October 19, of the same year, and to trace the progress of the society from that time to the year that now engages our attention.

The War of the Revolution was over, although the country was to be in a disturbed state until the signing of the treaty of peace in 1783. Many physicians had returned from a military experience, having been brought into touch with new and larger ideas, and there was a feeling that the profession of the country should take its place on a higher plane with the medical men of European countries. The pioneer medical society of the United States, that of New Jersey, founded in 1766, now renewed its meetings that had been suspended from November, 1775, to November, 1781, because of the war which had been waged largely in the territory of that state. The constitution of Massachusetts had been adopted a year before and the first session of the legislature was held October 25, 1780. The founding of the American Academy of Arts and Sciences in Boston in the latter year, on the general plan of the Royal Society of London, may be considered to have had something to do with the organization of the Massachusetts Medical Society in 1781, for Edward Augustus Holyoke, first president of the medical society, Cotton Tufts, chief promoter and president for eight years, and six others were incorporators of both societies, the by-laws of which have many points of similarity. Moreover, John Warren, one of the incorporators of the Massachusetts Medical Society and its president for eleven years, became a fellow of the academy in August, 1781, not long before the Massachusetts Medical Society started on its long and honorable career. Altogether, eighteen of the early members of the medical society had membership also in the American Academy of Arts and Sciences previous to the adoption of the reorganizing act of the legislature in 1803.

Of the thirty-one incorporators of the Massachusetts Medical Society, five were trained in statesmanship, namely, Cotton Tufts, Samuel Holten, John Frink, Sr., William Baylies and Oliver Prescott; three had foreign training: Thomas Kast, James Lloyd and John Barnard Swett; three were scholars: Isaac Rand, Sr., Isaac Rand, Jr., and Joseph Orne; and four had had military training: John Warren, John Barnard Swett, Oliver Prescott and Thomas Welsh. The rest were practitioners from different parts of the state, William Whiting being the only one from the extreme western part, although Giles Crouch Kellogg represented Hadley, and Ebenezer Hunt, Northampton.

Under the original charter of 1781 the number of fellows was limited to seventy. The objects of the society were to effect a system of adequate and uniform medical education, and to elevate the standard of professional intercourse among practitioners; power was granted to examine and give letters testimonial to approbated candidates for the practice of physic and surgery (early phraseology); fellows and officers were elected by the society itself, and meetings were held in April, June and October, and oftener by adjournment. This was in the first period of the society's existence—twenty years. Josiah Bartlett says in his annual discourse in 1810: "Vacancies by death or other causes were filled with senior practitioners, in the respective districts, till the law of 1803." Because of the small membership scattered over a large territory, the society took on a character of exclusiveness and, as time went on, it became increasingly difficult to obtain a quorum at the meetings, and penalties for non-attendance proved of no avail in producing the required numbers. It needed to be made democratic, and this came about at last in 1803.

During the first ten years of its life, the society owed much to its secretary, Nathaniel Walker Appleton, a pupil of E. A. Holyoke, the first president. Appleton, of Boston, was constant in his attendance at all meetings of the society and council. His records, which were writen in excellent chirography with nut-gall ink on rag paper—a rare commodity today—are as legible as they were when inscribed one hundred and thirty years ago. He posted up the Charter Book and attended to a very considerable correspondence, as attested by the minutes and by the letters that have been preserved. Failing health compelled his resignation in 1793, and he died in Ohio two years later, at the early age of 43. When he and Cotton Tufts ceased their labors for the society, after 1795, a period of decadence began. Dr. Holyoke, because of living in Salem, seventeen miles away from the capital where the meetings were of necessity held, was able to be present very seldom, and the second president, William Kneeland, attended only one meeting during his two-year term of service, the vice-presidents, Dr. Pecker and Dr. Tufts, presiding in his absence.

Cotton Tufts, vice-president 1785-1787 and president 1787-1795, was most punctilious in his attendance, coming twelve miles regularly from his home in Weymouth to attend the double meetings—a morning meeting that was adjourned to the afternoon. He reported cases and read papers, and it was during his incumbency that the first volume of medical papers was published, 1790. From the first meeting of the society, July 18, 1782, through his term as president in 1795, thirteen years, first as councilor, then as vice-president, and finally as president Dr. Tufts was absent from only two of the forty meetings of the council held during that time. What a record of fidelity! From papers that have been handed down in the families of his descendants it would appear that he called the first meetings for the organization of the society, and an early draft of the by-laws is in his precise and very legible handwriting.

From 1796 on the meetings were poorly attended; in 1800 the treasurer was instructed not to call upon any fellow for an assessment from June, 1794, to 1800, and in 1802 the first steps were taken looking toward a reorganization. A committee reported January 19, 1803, recommending, "That the society apply to the General Court at their present session that the limitation of the number of the society be removed, and for an extension of its power and privileges." John Dexter Treadwell of Salem, another pupil of Dr. Holyoke, seems to have had a good deal to do with the reorganization, judging by a vote passed by the society, June 6, 1833, on the news of his death.

The society is living today under the slightly modified act of March 8, 1803, which removed the restriction as to the number of fellows, placed the election of the officers in the hands of the council, who held three stated meetings a year and appointed five censors to examine candidates for practice. in the state at large. At this time the councilors were elected by the society, and it was obliged to issue certificates under penalty of a fine. At once the society began to grow. The Charter Book shows a long list of new fellows in 1803 and the succeeding years, and we have noted already that there were 160 fellows in 1807. The meetings of the council were well attended; amendments to the by-laws—a sure sign of progress—were offered each year, and all signs indicated the beginning of that vigorous life which has carried the society through the succeeding century. During the first period the society had friction with Harvard College in the matter of the authority to license practitioners of medicine, and this matter was finally adjusted amicably in 1794. The first annual dinner was given in 1796. Letters preserved in the society's safe show that touch was kept with the other medical societies, notably the College of Physicians of Philadelphia, 1791-92; Medical Society of New Haven, Connecticut, 1791; Medical Society of London, England, 1792; and the New Jersey Medical Society, which after correspondence with the Massachusetts Medical Society in 1788 finally obtained, in 1790, a charter from the New Jersey legislature for a period of twenty-five years. New Jersey suspended its meetings again, from 1795 to 1807, and after that has held regular annual meetings.

One of the features of the act of 1803 was that upon application of any five members to the council that body might establish district societies. In the minutes of the meeting of the council held February 2, 1804, we find this entry: "That the petition for a District Society (presented October 3, 1803) in the town of Boston, to include Roxbury, Charlestown & Cambridge, be granted, but the chairman of said petitioners (Aaron Dexter) be requested to state by next meting of council the members said society will compose." As there is no further entry on this subject it is obvious that the project fell through, for the Suffolk District Medical Society was not organized until 1849. District societies were authorized and established in Worcester and in Essex Southern, both on the same day, June 7, 1804. On October 4, in the same year, a petition for a district society in Lincoln and Cumberland, Maine, was granted, Maine being then a part of Massachusetts; but nothing came of this, and the same was true of a petition of James Mann of Wrentham and others, June 5, 1806, to form a district society in Norfolk. It may not be out of place to state here that after the formation of the Berkshire society, the next year, no other district societies were organized until Hampshire formed its society in 1831.

One advantage of a district society was that such a society had a special board of five censors, appointed by the council, to examine candidates for the practice of medicine, and another was that it could appoint its own officers and make its own regulations, provided they were not in conflict with the by-laws of the general society. The members were required to report to the council "all such cases as may be selected for their importance and utility."

The Pharmacopoeia of the Massachusetts Medical Society was ordered printed in 1807, under the editorship of John Collins Warren and James Jackson, and apothecaries throughout the state were asked to adopt it and committees were appointed to make inquiries as to its working. This was the first publication of its kind in the country. John Warren was president of the society and his son, John Collins, secretary; an oration had been given each year since 1804; the annual assessment had been raised from $1 to $2, and the by-laws had been revised in 1806. Indications were many that the society was progressing when the petition for the formation of a district society in Berkshire received the favorable action of the Council October 7, 1807.

Whether all eight of the Berkshire fellows signed the petition we do not know, but there can be no question that there were able men at the helm, men who were to uphold high standards in the profession and pass on to their successors the torch that was to kindle the fire of medical education in the Berkshire Medical Institution and keep it alight for over forty years. Erastus Sergeant and Timothy Childs represented Berkshire as councilors when the petition was acted on and for several years after. Let us sketch briefly the lives of the founders, getting many of our facts from Dr. Abner Marshall Smith's "Medicine in Berkshire," published in The Book of Berkshire, Pittsfield, 1890.

Timothy Childs, father of Henry Halsey Childs, organizer of the Berkshire Medical Institution, was born at Deerfield in February, 1748. He entered Harvard College in 1764, but was forced to leave at the close of his junior year because of lack of funds. From Cambridge he returned to Deerfield and studied medicine with Dr. Thomas Williams, removing to practise at Pittsfield at the age of twenty-three. In 1774 Dr. Childs was appointed chairman of a committee to draft a petition to His Majesty's Justices of Common Pleas in the county of Berkshire, remonstrating against certain acts of Parliament which had just been promulgated, and in the same year took a commission as lieutenant in a company of minute men. On the news of the battle of Lexington he marched to Boston with his company. Being appointed surgeon of Colonel Patterson's regiment, Dr. Childs accompanied the regiment to New York and to Montreal, returning to the practice of medicine in Pittsfield in 1777. He introduced the practice of inoculation in that town and later, with the assistance of his son, substituted for it vaccination, against strenuous protest. Evidently he was a man of affairs and had interests outside the daily routine practice of his art, for he was elected representative to the General Court in 1792 and later was senator and a member of the executive council. Harvard College conferred on him the honorary degree of M.D. in 1811, he was a councilor of the Massachusetts Medical Society until his death, and, on the organization of the Berkshire District Medical Society he was appointed a censor and was elected its first president. For thirty years Dr. Childs was the leading physician of Pittsfield and was called as a consultant in the neighboring towns, keeping up his activity until a week before his death at the age of seventy-three, in the town of his adoption, February 25, 1821.

The office of censor, to which Dr. Childs had been appointed by the council, was no sinecure in those days. The Puritanical notion that duties must not be evaded was in force. Listen to this extract from Chapter V, Section 2, of the by-laws of 1806, as printed at Salem by Joshua Cushing: "The District Censors shall meet at such times and places as the Counsellors may direct, and no member of a district society shall be exempted from sustaining the office of a censor for the district wherein he resides; and in case anyone, appointed to the aforesaid office, shall *unreasonably* neglect or refuse to perform the duties thereof, he shall forfeit and pay, to the treasurer of the general society, for every such neglect or refusal, the sum of ten dollars." Contrast this with the provisions of our by-laws today, under which the censors and district secretaries are paid from the funds of the general society three dollars for each applicant examined, and each supervisor receives mileage.

The other councilor at the time of the founding of the Berkshire society was Erastus Sergeant of Stockbridge. He was the chief surgeon for the county before the advent of Josiah Goodhue. The son of the Rev. John Sergeant, first minister of Stockbridge, he was born in that town, August 7, 1742. He spent two years at Princeton College, studied medicine with his uncle, the famous Dr. Thomas Williams of Deerfield, and on the opening of the Revolution was major in the 7th Berkshire regiment, serving at Lake Champlain from December, 1776, to April, 1777, and until Burgoyne's surrender. Yale gave him an A.M. in 1784 and Harvard an honorary M.D. in 1811. He joined the Massachusetts Medical Society in 1785 and therefore was familiar with the parent society and its aims, in the first period, during the last years of the eighteenth century, before the temporary decadence had set in. Dr. Sergeant was reputed to be the most skilful operator of his time, and his services were in demand within a wide radius. Tall, erect and thin, his figure was a familiar sight in Stockbridge. He died in the town of his birth of pulmonary hemorrhage while sitting at table, November 14, 1814, at the age of seventy-two.

Hugo Burghardt of Richmond, who was born in Great Barrington in 1771 and was a graduate of Yale, seems to have been an Apollo in his physical proportions. Dr. A. M. Smith quotes this of him: "tall, with a well-proportioned physical organization, erect and graceful in all his movements, he won the notice and admiration of all. Affable in his manners, his geniality threw a halo around his path and made him a most welcome visitor to scenes of suffering and sorrow. In discussion he was strictly logical, clear and convincing." Dr. Burghardt was a pupil of Dr. Sergeant. As a member of the militia he was wounded while opposing the followers of Daniel Shays in 1787, and in the War of 1812 he was a strong partisan for the government and sacrificed a large portion of his property in the cause. Previous to 1822 he was president of the Berkshire Medical Society, and he died October 18 of that year.

Not much is known about Remembrance Sheldon, except that he was born in 1759 and came to Williamstown in response to Shays' partisans and in opposition to Dr. William Towner, the chief physician of that place, who had incurred their displeasure. Dr. Sheldon practised there until his death in 1809.

Horatio Jones of Stockbridge was the son of Captain Josiah Jones of that town, and was born December 30, 1769. Pursuing his studies in Yale, his eyesight failed and he was obliged to give up. Then he took up the business of surveying, with the result that his eyesight and health were restored and he became a student with Dr. Sergeant. How much the pioneers did for medicine before the days of the schools, in instructing students and imbuing them with high ideals of professional attainments and conduct! For a time before beginning practice Dr. Jones was a druggist in Stockbridge. He became a fellow of the Massachusetts Medical Society in 1804 and went to Philadelphia the next year to perfect himself in surgery. In 1810 Williams College conferred on him the honorary degree of A.M. He died in 1815, aged forty-six.

William Buel was a native of Litchfield, Connecticut. He practised in Sheffield for twenty years, and died in Litchfield in 1851, aged eighty-three.

Oliver Brewster of Becket, a lineal descendant of the Pilgrim William Brewster, was born at Lebanon, Connecticut, April 2, 1760. He was employed as a surgeon in Colonel John Brown's Pittsfield regiment and was stationed in the Mohawk valley. Returning to civil life he was said to be especially successful in the treatment of acute diseases. There is no doubt that he had a large practice and was charitable to the poor. He was a deacon of the church and very religious, and his taking off occurred while in attendance on a seriously ill lady. He had just remarked: "I know not what more we can do, but we must all pray for her, and pray for ourselves," when he was stricken with an apoplectic seizure and died six hours later, February 15, 1812.

Eldad Lewis of Lenox had a widespread reputation for eloquence, wherefore he became the first orator of the Berkshire Medical Society in 1787. We have had specimens of his oratory. He settled in Lenox as early as 1778, took an important part in town affairs, assisted in establishing the first town library, and published one of the earliest newspapers in the county, a political campaign sheet. He was a good classical scholar and a forceful writer and speaker besides being a successful practitioner. After living in Lenox for over a quarter of a century, he moved to New York State, where he died.

This paper must close with these brief sketches of the founders. Enough has been said to show the sort of men they were,—idealists that one would expect to work for the bettering of medicine. How the Berkshire Medical Institution came to be organized in 1823 and fostered by Henry Halsey Childs for forty years, noted son of an eminent father, to rival and surpass the Fairfield Medical School of Western New York and the Castleton Medical College of Vermont, including in its faculty many of the eminent medical men of the time and during its life of forty-four years conferring the M.D. degree on 1120 students, must be left for another time. Then it will be interesting to study the troublous time of the Berkshire Society when its membership was small and it was hard to get the annual assessments paid, due to its great distance from the capital and the restricted facilities for travel, necessitating loss of the advantages that were enjoyed by the parent society and by the fellows who lived nearer, in the way of attending meetings and entertainments and the use of the library. Another grievance was the oppressive regulations of the boards of censors. The troubles came to a head April 20, 1831, when a petition asking for relief, signed by Henry Halsey Childs and forty others, was presented to a special meeting of the council. As a result of this petition censors were paid two dollars for each day's attendance upon the meetings of the board, and a rebate was made to the district society of one-third of the amount of the dues collected by the district treasurer, to be appropriated to the purchase of books for a district society library, and a loan was authorized of as many as sixty volumes from the library of the parent society. Thereafter began a period of rejuvenation. With the opening of the Boston and Albany Railroad transportation was improved; the membership increased and today numbers eighty-two fellows.

The Massachusetts Medical Society held its annual meeting in Pittsfield in 1852 and again in 1863, when Timothy Childs, son of Henry Halsey, was anniversary chairman. Franklin Kittredge Paddock of Pittsfield was president of the society in 1894-96, and successfully piloted it through much progressive legislation. Looking back over all the years, it is interesting to see how much is owed to the courage and fortitude of the pioneers who builded well for the coming generations by their unceasing labors for an ideal.

Medical Progress.

PROGRESS IN GYNECOLOGY.

By Stephen Rushmore, M.D., Boston.

Gonorrhea.

Hess[1] discusses the use of gonococcus vaccine as a means of detecting latent gonorrheal vaginitis in children, "provocative vaccination." The latent form of the disease is especially dangerous in asylums and homes. If once the disease is admitted, the danger of an epidemic persists until the patient is cured. In a hospital, the danger to other patients is over when the infected individual is sent home cured of the disease on account of which she was admitted.

Every candidate for admission to the "Home for Hebrew Infants" receives a subcutaneous injection of the vaccine. At first, injections were made at intervals of three days, doses of 250, 500 and 750 millions being used. Smaller quantities, however, prove efficacious, and now 100, 200, and 400 millions are employed. As the third injection has never yet been successful, it may well be omitted. That is, if latent disease became active it was no later than after the second injection that it made itself manifest in Hess' series of cases.

The incidence of gonorrhea was found to be surprisingly high. About one-half of the female children seeking admission (for all causes) were infected, and these individuals came chiefly from their own homes, and not from other institutions.

As a result of this provocative vaccination no infected case has slipped into the general hospital from the admitting pavilion in the past year, and on several occasions when active disease has developed in individuals who had been in for a long time, the vaccination has shown latent disease in certain carriers who had hitherto escaped detection. The reaction seems to be not absolutely specific, for at times similar injections of staphylococcus vaccine give positive results, yet gonococcus vaccine has been found to be the more reliable.

There seems to be very little, if any, constitutional reaction, but there appears a purulent vaginal discharge with specific organisms in individuals in whom not only were no organisms found previously, but no pus was present. Hess says the vaccine may be used "prophylactically" also; here the course of the disease is entirely changed, becoming very mild; in some patients no discharge was present and very few pus cells with microörganisms were found.

There was opportunity for post-mortem examination in four cases. Macroscopically, the vagina appeared negative, even in the case in which the disease had existed for only three weeks. The uterus and the appendages were also normal. The only abnormal condition was redness of the tip of the cervix, which, however, did not extend along the cervical canal to the internal os.

Sullivan and Spaulding[2] present their findings as to the prevalence of gonorrhea in a series of 500 delinquent women who had recently been in the Reformatory for Women at South Framingham. Their paper gives conclusions which are in the form of summaries and, therefore, not suitable for further condensation, but certain of the facts which they bring out deserve widespread attention.

The cases may be divided into groups, according to the type of offense for which the individual was committed. The first group included all women serving sentence for an offense which certainly or probably has a sex basis; of these, 86.6% showed positive gonorrhea. The second group gave a history of promiscuous sex relationship, but were serving sentence for some other offense; of these, 76.8% showed positive gonorrhea. The third group included those who gave no history of sex promiscuity and who were serving sentence for other offenses; of these, 44.7% were positive. Among prostitutes (289 cases) gonorrhea was found in 98.2%, syphilis in 65.5%, while a doubtful Wassermann was present in 9.5%.

In 500 consecutive cases of delinquency, 75.7% showed gonorrhea, 44.7% showed syphilis, and 9.3% gave a doubtful Wassermann. In 119 who should be permanently segregated on account of mental defect, gonorrhea was present in 90.8%, syphilis in 61.3%, and a doubtful Wassermann in 6.7%. Consideration of these figures tends to bring a realization of the seriousness of the problem of sex disease.

The conclusions of Sullivan and Spaulding should be considered carefully by the medical profession, for they point out definite lines of action leading to improvement in the present situation. Three methods of dealing with venereal disease among delinquents are presented.

1. Permanent segregation of the mentally defective (24% of this series), of whom 61% have syphilis and over 90% have gonorrhea.
2. Early diagnosis and intensive treatment of all persons who pass through the courts and are detained in public institutions on any charge.
3. Provision of hospitals throughout the country for the treatment of such infected persons. While it may not be considered feasible just now to have hospitals exclusively for venereal disease, there should be special wards in all hospitals where venereal disease might be treated.

The problem is medical as well as social, and it can be solved only as the physician appreciates his responsibility and enlists his interest and influence.

Syphilis.

Norris[3] reports a case which he regards as syphilis of the uterus, although microscopic examination showed no gumma, and the spirochete was not found. The patient was 36 years of age; had three children, of whom the youngest was seven years old. Six years before admission, the patient apparently acquired syphilis from her husband. Both were given specific treatment at that time. Since the syphilitic infection three miscarriages had occurred, in the second, third and fifth month, respectively. The patient came to the hospital for menorrhagia, persisting since a miscarriage six months before. Hemoglobin, 52; red blood cells, 5,000,000; leukocytes, 4500; Wassermann strongly positive. Pelvic examination showed normal parous organs, no evident cause for the bleeding. Exploratory curettage was advised.

During the operation the uterus was found to be so friable that the cervix was torn and the fundus was perforated, though no undue force was used. In view of the history and the findings, a supravaginal hysterectomy was performed, leaving in the tubes and ovaries. Microscopical examination showed diffuse chronic inflammation with marked angiosclerosis in the endometrium, and in the myometrium less inflammation but considerable angiosclerosis. The histological picture here, though not characteristic, resembles that described by other writers. It is doubtful if syphilis of the uterus shows any characteristic changes, in the absence of gumma and the spirochete.

A review of the literature shows few well-authenticated cases of syphilis of the body of the uterus; the cervix is affected somewhat more frequently. The disease is found chiefly in the endometrium, of which a "gummatous endometritis" has been described. Since the introduction of the Wassermann test and the finding of the spirochete, there has not yet been a comprehensive study of the endometrial changes with reference to syphilis, and an excellent field for investigation is here presented.

Peterson[4] presents the results of the study of several series of cases at the clinic of the University of Michigan, with reference to the presence of syphilis, especially in gynecological and obstetrical cases. His conclusions may be given briefly. Especially in hospital practice, where even careful histories fail to arouse the suspicion of latent syphilis, routine Wassermann tests should be made in gynecological and obstetrical cases, in the interest of the patient. The history is often negative. Among patients certainly luetic, only 5 of 22 gynecological cases, and 8 of 18 obstetrical, gave a history of syphilis. The percentage of syphilis in the whole number of patients was about five, but would vary in different clinics, and would probably be higher in the large urban hospitals. In the maternity cases, appropriate treatment with salvarsan and mercury gives a better chance for a living child.

In this connection the findings of Williams and Kolmer[5] are interesting. Their series comprised 300 gynecological and obstetrical cases. "The percentage of positive reactions (22.6%) corresponds closely with the generally accepted incidence of syphilis in adults. The incidence of syphilis in gynecology, on the basis of a Wassermann reaction, is so definite that this disease cannot be excluded on the basis of a negative history and the absence of demonstrable evidences of syphilis; while a particular lesion may not be syphilitic it is, however, highly important to institute antiluetic treatment if syphilis is demonstrated by the Wassermann test.

"Of particular interest is the relatively high percentage of positive reactions observed in the following conditions: stillbirths, 75%; rectal disease, 50%; amenorrhea, 50%; habitual abortion, 50%; pelvic inflammatory disease, 36%; sterility, 33%; abortion and miscarriage, 29%; metrorrhagia, 20%; myomata of the uterus, 16%; gonorrheal vaginitis, 10%; pregnancy, 17%.

"The history of infection has been obtained in but a few cases. This is a well-known fact; it is not the intention of the patient to deceive, but the primary lesion is overlooked and the secondary stage may have been disregarded. The high degree of latent syphilis should make a routine Wassermann test in gynecological and obstetrical practice as advisable as any other laboratory procedure; it is certainly as advisable here as in medical or surgical cases.

"In view of the frequency of latent syphilis as revealed by the Wassermann test, and the scant attention paid to syphilis as an etiological factor in the production of pelvic pathology in women, we feel that a routine Wassermann reaction and the subsequent histopathological study of the tissues removed from syphilitics may bring more light to bear on this neglected phase of gynecology."

Salpingitis.

The possibility of pelvic inflammation in the female, secondary to infection elsewhere in the body, has long been recognized, but the occurrence has been regarded as of great rarity. Definite proof rests only upon careful pathologic and bacteriologic work. Danforth[6] reports a case in which he thinks adequate proof is presented.

A young woman was operated on for acute gangrenous appendicitis; no drainage. Operations one, three, five and eight years later for relief of adhesions gave only temporary relief. Nine years after the first operation the patient underwent another laparotomy, at which there were found many adhesions in the pelvis and lower abdomen. Both fallopian tubes were removed on account of infection, increase of size, and the presence of numerous small white nodules. These showed streptococcus hemolyticus in pure culture. Vaccine treatment gave severe local reaction in the pelvis. Frequently in the six months following the removal of the tubes there was slight fever, and as the tonsils were enlarged, following an acute attack of tonsillitis a year before, the tonsils were removed. At the time of the acute attack streptococcus had been found in the tonsils in pure culture. Six months after the removal of the tonsils, as there was again slight elevation of temperature and discomfort in the neck, an x-ray of the teeth was taken and an alveolar abscess was discovered. The teeth were extracted and the pus showed a pure culture of streptococcus.

It seems probable that hemogenic infections, acknowledged now in some organs to be far more frequent than was suspected a few years ago, are not at all rare in the fallopian tube. The frequency of ascending tubal infection has tended to direct attention away from any other route.

While this case is not absolutely convincing, it is very suggestive, especially in connection with the work of Rosenow and of Davis.[28]

Tubercular Adnexitis.

Under this heading Geist[7] presents a study of tuberculosis of the tubes and ovaries, considering etiology, source of infection, pathology, symptoms, diagnosis and treatment, and reports briefly a series of twenty-eight cases from the Mount Sinai Hospital. Several points may be repeated. There is nothing characteristic in the symptoms; they are of chronic pelvic inflammation, but often without the history of any acute attack. Nearly all of the patients are sterile, and in some sterility is the complaint. Menstruation may be scanty and irregular or sometimes profuse and painful.

Frequently the diagnosis is not made until operation, and sometimes only in the laboratory. Chronic tubal disease in a virgin is tuberculous in 90% of the cases. A point which should arouse suspicion is the presence of a chronic pelvic inflammation of unknown origin, which does not improve, even temporarily, in spite of all treatment. Occasionally the diagnosis is made by accident, from curettings.

The question of treatment presents difficulties. Genital tuberculosis does not of itself cause death and has some tendency to heal spontaneously. If the diagnosis is fairly clear without operation and tuberculosis is present elsewhere in the body, operation is contraindicated. If no other lesions are evident, hygienic treatment may give a local cure,—the ideal treatment, if it can be carried out, when lesions are not very far advanced and symptoms are not marked.

If hygienic treatment is not possible nor advisable, for social or pecuniary reasons or because symptoms are marked, operation is indicated. In younger women a tendency to conservatism is advisable, in older toward radicalism. Hygienic treatment is always necessary to get the best results, whether operation is or is not performed.

Post-operative complications are not uncommon in spite of the most careful precautions. The abdominal wound frequently breaks down; fistulas form in the advanced cases. Old smouldering foci elsewhere in the body may light up, and, too, mixed infections may occur, sometimes resulting fatally. A study of the immediate results in the cases reported should make one cautious about subjecting these patients to operation. The average stay in the hospital was six weeks.

Hematometra.

Gellhorn[8] reports a very unusual case of hematocolpos, hematometra and hematosalpinx, in a woman of 74. She had never been pregnant and menstruation had always been normal, ceasing 35 years before. Severe pain and symptoms pointing to obstruction of the urinary flow led to the detection of a large fluctuating tumor which filled the entire pelvis and extended upward almost to the umbilicus. Operation under spinal anesthesia was followed on the fifteenth day by fatal embolism.

The case raises several questions, some of which can be answered easily. The obstruction in the vagina was due to adhesion of opposing vaginal walls, following so-called senile vaginitis. The bleeding, so long past the climacteric, was due to carcinoma of the body of the uterus. The obstruction leading to hematosalpinx is not perfectly clear in its etiology. Gellhorn attributes it to the damming back of the blood, but it has generally been referred to some inflammation apart from that due to the organization of unclotted blood.

Uterine Infection.

The Carrel method of treating septic wounds with Dakin's solution has been recommended and described by Sherman.[9] The special apparatus employed in the treatment of infection in the uterus is briefly described in the original article. The method should have a fair trial, for if it should give in uterine sepsis results comparable with those already obtained in the treatment of external infected wounds it would be a most valuable resource to the obstetrician and gynecologist.

Myomectomy.

Stacy[10] reports the results of myomectomy at the Mayo Clinic. It has been generally recognized that the operation is more dangerous than hysterectomy, but of course the size and position of the tumor must be taken into consideration. In Stacy's series of 323 cases, there were 226 abdominal and 57 vaginal myomectomies, with a mortality of .6%. In 22.5% there was an elevation of temperature following operation, but no complication to prolong the convalescence beyond the usual time. Of 226 abdominal operations, 172 were done primarily for removal of the tumor. In the remainder some other pelvic operation was associated with myomectomy. Multiple myomata were found in 36%.

The late results are the most interesting. Replies were received in regard to only 203 patients. Six had died (cause not stated). Hysterectomy had been done later in 7. Curettement had been done later three times. The menopause had occurred since operation in twenty. In regard to pregnancy, six miscarriages had occurred, three in one patient; normal full-term pregnancy, eighteen times. There were six cases of pregnancy following operation, in patients who had been sterile before. At the time of myomectomy, four patients were pregnant; all went on to normal full term.

So in patients under thirty-five, if myomectomy is possible, it should be seriously considered; and the patient should have the opportunity of choosing between myomectomy and hysterectomy, fully understanding the possibility of a later operation if myomectomy is done.

Removal of Myoma by Morcellation.

Child[11] advocates morcellation as a routine procedure in the treatment of large myomata of the uterus, a method of attack hitherto reserved for certain extremely difficult cases. Two chief advantages are claimed: a small incision and greater safety in tying the large vessels. Child prefers the low transverse incision with all its advantages. By grasping the tumor with heavy traction forceps, keeping the tumor always close to the abdominal wall and removing pieces of the tumor from the exposed area, handling of the intestine is almost completely avoided. The loss of blood is not much, if any, greater than by other methods. The large vessels are not tied until most of the tumor is removed, and then the broad ligaments are lax and easily exposed. This is in contrast with the tense ligaments often seen with large myomata.

On account of the slight trauma to the intestine during operation, there are few post-operative intestinal complications and the general course of the convalescence is smooth. There is appended a list of fifty consecutive cases, with no mortality.

Cancer of the Uterus and Percy Cautery.

Smith[12] discusses one hundred cases of carcinoma of the cervix of the uterus treated at the Mayo Clinic by the Percy cautery. The operator uses the cautery with one hand, and with the abdomen open, holds the uterus with the other, thus controlling the temperature and position of the cautery. Cauterization without opening the abdomen cannot be thorough. The vaginal dilator has been discarded because it tends to give linear tears which, though small and of themselves of no importance, have in some cases been found later to be the seat of implantation metastases. Following cauterization, the vagina is thoroughly washed out with tincture of iodine. Recently the internal iliac arteries have been ligated and one or both ovarian arteries, to control the hemorrhage which occurs later in about 40% of the cases, if ligation is not performed.

Bladder fistulas, usually vesico-uterine, occurred in 10% of the cases and healed spontaneously, except one case which was operated on. Smith thinks it would have healed if it had been left alone. The operative mortality was 1%, not due to the operation. Of the series of one hundred, twenty-six were later subjected to total abdominal hysterectomy. In nineteen of the twenty-six specimens, the pathologist was unable to find any carcinoma. In seven it was found. The usual time for the hysterectomy was four weeks following the cauterization, although some cases went several months.

Smith estimates the limit of the effect of the heat at three centimeters, and says that he is of the opinion that there is more danger from too cold than from too hot cautery. It is important to pass the cautery well up into the uterus as the disease may be present at the level of the internal os.

The cases may be divided into four groups according to the extent of the disease.

1. Growth limited to part of the cervix only. These are treated by opening the abdomen, cauterizing thoroughly, and then doing immediately a complete hysterectomy. There was only one of this group in the series.

2. The disease is still limited to the cervix, but this includes cases with a large cauliflower

growth, in which there is sometimes only slight involvement of the cervix. The uterus is freely movable. It seems probable that of this group a large proportion will have cauterization and immediate hysterectomy among future cases.

3. There is restriction of mobility of the uterus with involvement of the broad ligament and vagina, but not to fixation or glandular involvement.

4. The uterus is fixed.

Of one hundred cases, fifty-three belonged to Group 4. Of twenty-six cases operated upon, fourteen were from Group 3, eleven from Group 2, and one from Group 1. In the third group formerly operation would not have been considered as a primary procedure. Following cauterization, these frequently improve greatly and then appear to be good operative risks.

Leonard and Dayton[13] report two fatalities after the use of the Percy "cold iron" method in the treatment of inoperable cancer of the cervix. The histories are given in detail, including the post-mortem findings. The Percy technic was carefully applied, yet uninjured carcinomatous tissue was found within one centimeter of the site of the heating iron, so that the technic must be regarded as ineffectual in the eradication of carcinoma. Apparently in both cases death may be attributed to the treatment.

The findings in one case indicate that lesions similar to those in fatal cases of cutaneous burns may be produced; though this patient died suddenly of pulmonary embolus, the other lesions present would undoubtedly of themselves have produced death in a short time.

The mass of sloughing tissue forms a medium for the growth of microörganisms which may spread through the local thrombosed vessels to the general circulation. It seems probable that the greatest danger in the application of the Percy cautery is a local infection and subsequent general sepsis. Only one detailed report of a fatal case was found in the literature (Boldt), but Percy refers briefly to the findings on post-mortem examination in four cases. It seems probable that there has occurred a much larger number of cases than has yet been reported.

Bancroft[14] also reports the post-mortem findings on a case treated with the Percy cautery. There were no lesions found at autopsy which indicated any error of technic, and the patient had died with symptoms of severe toxemia in about forty-eight hours ofter the treatment had been given. There had been no signs of hemorrhage or peritonitis. There were found areas of uninjured cancer cells beyond the reach of the cautery. There were no signs of gastric ulcer, as in superficial burns and in one of Leonard's cases. No apparent cause for the death was found on macroscopic or microscopic examination of the organs.

Clinical Course of Cancer.

Gaylord,[15] in a résumé of some of the results of laboratory research in cancer, which are of value to the clinician, calls attention to certain facts of special interest to the surgeon. He says: "Reasoning from the experimental demonstration of these (immunizing) forces in inoculated animals, to the existence of such forces in animals spontaneously suffering from cancer and to the phenomena observed in the clinical course of cancer in human beings, we have before us the logical explanation of many of the vagaries and ill-defined phenomena in cancer in man. We understand now why surgical interference is so successful in the very first stages of cancer, and why it is so unsatisfactory in the later stages. We should be cautioned against tedious and long-drawn-out operations, using ether or chloroform as an anesthetic and associated with marked loss of blood; and we can offer certain evidences that show that x-ray and radium exercise their curative effect through the immunity" and not through their direct action on the tumor cells. In the bibliography Gaylord gives the references to the experimental work by various investigators, which furnishes the basis for these conclusions.

Precancerous Changes in the Uterus.

The study of the histology of cancer and of organs in which cancer develops has led to the conception of "precancerous changes"; that is, "such pictures that one feels reasonably certain that a malignant growth is in a developing stage." We have then the conception that "it is not true that a pathological condition must be either cancer or not cancer. It may be neither the one nor the other. It may be in the process of becoming cancer." Without stopping to consider the interesting problem presented by this point of view, we may study the changes which are regarded as "precancerous" in the uterus, as set forth by Stone [16] in his résumé of the subject.

Metaplasia, by which is meant in this connection transformation of the cylindrical epithelium of the uterus into the stratified variety, is regarded as a precancerous condition, though it is by no means always followed by cancer, and occurs congenitally and following chronic inflammation due to gonorrhea, tuberculosis, and perhaps syphilis. But true epidermization, except in the presence of polypi and other benign tumors, should always be regarded as suggestive of cancer. Hitschmann says it does not occur except as a malignant process.

It has been observed that cancer develops in cervical erosions. But the apparent infrequency of cancer following this very common lesion suggests strongly the absence of histogenetic development. However, in the healing of erosions, atypical proliferations of epithelium have been noted with sufficient frequency to suggest that some of these cases might have gone on to definite cancer.

Leukoplakia may also be regarded as precancerous because in so many instances definite malignancy has developed later; yet some regard it as already cancer in an early stage, that is, with little invasive property. The tendency to atypical growth of the epithelium of uterine polypi is well known and polypi are regarded as having a malignant tendency. The same is true of the epithelium adjacent to submucous fibromyomata, where, owing to circulatory and nutritional disturbances, metaplasia is not unusual.

In glandular hypertrophy and hyperplasia deviations from normal may at times be distinguished from cancer only with difficulty. Stone's article is illustrated by a number of microphotographs of precancerous conditions which are very interesting.

Cancer of the Uterus—Operation.

Peterson[17] discusses the extended operation for cancer of the uterus with frankness and fairness. Increasing experience strengthens the belief that it is not an operation for inexperienced hands. Both primary and ultimate results must be taken into consideration, and the operator must be honest in reporting cases. While "makeshift" operations, begun as radical but completed with macroscopical cancer still in the body of the patient, may be justifiable, they should be called incomplete and not extended operations. The result will determine whether they were radical or not, but they should be properly named.

Cancer of the body and cancer of the cervix should be considered separately, both as to primary and as to late results. A critical study of the cases of cancer of the body leads Peterson to advocate the extended operation for this group also; the usual panhysterectomy gives less favorable results.

In the cases of cancer of the cervix, the hoped-for reduction in the primary mortality through improvement in technic has not been realized in spite of occasional series of seemingly very good results. For the whole series it rises to slightly over 25%. These deaths emphasize the fact that each patient must be studied as an individual. Lungs and kidneys and heart and whole vascular system must be taken into account. A tumor may be eradicable yet inoperable because of weak or diseased kidneys. In general, a patient with carcinoma of the uterus is a poor risk.

Whether the growth is or is not eradicable can be determined in many cases only after opening the abdomen; but just because a patient will die of cancer if not operated upon does not justify any sort of an operation, no matter how severe.

It has seemed as if the operability of cases in the latest series was lower than in the earlier, but this cannot be determined exactly because other methods of treatment have been given a trial—for example, the cautery. This Peterson uses now only as a palliative measure; sometimes in preparing a cancerous cervix for radical removal.

The end-results are gratifying, though leaving much to be desired. Computing by Wertheim's formula, a permanent cure (five years or more) was obtained in 47.3% of all cases operated upon, and in 62% of all who survived the operation. This compensates in part for the high mortality at operation; and Peterson still favors the radical operation as the best means of treating cancer of the uterus.

Cancer of the Uterus—Radium.

While there has been reported of late little further progress in the use of radium in cancer of the uterus, Clark's[18] summary of his experience and formulation of views, which represent the general consensus of opinion, deserves careful reading. He emphasizes the highly unsatisfactory results of the surgical treatment of cancer, although until recently surgery offered practically the only hope of cure.

Between cancer of the cervix and cancer of the body of the uterus there is a great difference which should be recognized. Operative treatment of cancer of the body, even if disease is well advanced, gives relatively satisfactory results. In cancer of the cervix, operative treatment gives relatively satisfactory results only if the growth is sharply circumscribed. If the case is borderline, operation is very unsatisfactory, giving high initial mortality, high morbidity, high percentage of recurrence.

For borderline and inoperable cases Clark has used radium, in doses of from eighty-five to one hundred milligrams. It is not a panacea, it is not uniform in its results, and there is no way of telling in advance which cases will be benefited. Sometimes growth seems to be actually accelerated. Other cases show an astounding improvement and some a local cure. The morbidity following treatment is much less than following operation, so the tendency is to use radium in all borderline cases. But "the cloud that hangs over the remedy is the danger from unbridled optimism." It is too soon to be sure of ultimate results.

Cancer of the Uterus—X-ray.

Pfahler[19] again calls attention to the value of x-ray in deep malignant disease, especially as a post-operative procedure. Through the introduction of the Coolidge tube and "crossfire" method and adequate filtration, the therapeutic effect can be vastly increased without much danger of burning the skin. In metastatic carcinoma of the bone, following removal of the breast, remarkable improvement followed the use of the x-ray.

With x-ray may be combined electro-thermic coagulation and occasionally radium, which is, however, similar in its action and therefore should be employed simply to give another point for crossfiring, and should not be applied to the same surface as the x-ray. While no case reports of cancer of the uterus are given by Pfahler, he calls attention to the obvious advantage in the conditions following operation and in the cases of recurrence. Even for the inoperable cases, there may be offered some hope of cure, Pfahler thinks,—some benefit in practically all, and, at least, temporary improvement. The method should be more widely used.

Uterine Hemorrhage and X-ray.

The time has come when judgment can be passed on the x-ray treatment of uterine bleeding with some degree of confidence, for considerable time has elapsed since it was first used, and the number of cases is large. Frank[20] gives some results of his own experience and refers briefly to the literature. The selection of cases, the general directions, the control of physical findings, should remain in the hands of the physician, while technical questions should be left entirely to the x-ray specialist.

The action of the x-ray is at least twofold,—on the ovary and on the uterus itself,—though clinically the two cannot be distinguished. The application may be fractional, that is, short exposures repeated two or three times weekly over long periods of time, and especially to be recommended if reduction of bleeding and not amenorrhea is desired; or intensive, employing enormous doses at each sitting by which amenorrhea is more easily obtained. By combining the two methods a skilful technician can produce effects almost at will.

Frank says the treatment is applicable in functional menorrhagia of adolescence, maturity, and in the menorrhagia and metorrhagia due to fibromyomata. It is especially applicable at the climacteric, but malignant disease should first be excluded. It is in the fibromyomata that the treatment has given the greatest amount of discussion. In suitable cases the results are reported as being almost uniformly successful, but while Kroenig and Gauss regard 85% of their cases as suitable, Frank thinks only 5% of his cases fall into this category.

In the first place, cancer must be excluded by exploratory curettage. If deformation of the uterine cavity is present, preventing thorough curettage, the case is not suitable for raying. Then complications which would render x-ray useless are not infrequent, while distinct contraindications were found in 18½% in Frank's series. The expense of the x-ray is considerable, fractional exposures costing approximately three dollars a treatment, and intensive exposure from one hundred to three hundred dollars. While, therefore, the x-ray may be regarded as invaluable within proper limits, the field of usefulness is distinctly narrow. The main danger is in the case of overlooked malignancy. "Hence the treatment should always be controlled by the trained gynecologist, because diagnostic accuracy is far more essential than if operative measures are contemplated."

Endometrium in Myomatous Uteri.

Geist[21] brings forward the suggestion, made some time ago, that the cause of abnormal bleeding from the uterus in the case of myoma of the uterus is a disturbance of function of the ovary. The anatomical basis for this view on the part of Geist is that in the series of cases studied there were found in a large percentage certain changes in the uterine mucosa, namely, a "hypertrophy of the endometrium." Atrophy was occasionally found, but it was associated with large tumors and was apparently due to pressure. The anatomical change in the ovary is most often a large corpus luteum, occasionally cystic. It has been pointed out by Meyer and Ruge that the acme of the development of the corpus luteum coincides with the greatest hypertrophy of the endometrium in the premenstrual stage of the menstrual cycle. Geist says "these findings seem to us very significant in view of the fact that the ovarian influence is of primal importance in regulating the normal hemorrhage from the uterus, and it seems reasonable to suggest as a possible etiological factor for the atypical hemorrhage associated with fibroids, disturbance in the function of the ovary, perhaps of the corpus luteum." In this connection it is interesting to compare Halban's view, that absence of bleeding with an ovarian cyst suggests overgrowth of the lutein tissue.

Uterine Prolapse, Cystocele, Rectocele.

Frank[22] discusses at length the subject of uterine prolapse and the conditions often associated with it—rectocele and cystocele. The normal anatomy of the parts involved is first described, then the pathological anatomy, the selection of the operation best adapted to relieve the condition present, the preparation of the patient for operation, the anesthesia, suture material and drainage, and, finally, the operative technic.

Frank attempts to standardize the plastic operations so that an anatomical repair may be performed, as is done as a matter of course in an inguinal hernia operation. The attempted anatomical repair in perineal lacerations by suture of the levator ani muscles does not meet with Frank's approval, for reasons which he specifies. That is, it is more limited in its applicability than is generally taught. The same may be said of interposition of the uterus for prolapse.

One difficulty in the way of standardizing operations for repair of injuries of the cervix, vagina and perineum is that the landmarks are not often clear. Lacerations and stretching do not follow the same lines in all cases. It is safe to say that no two cases present identical conditions. Yet the effort at standardization is wise, and Frank's descriptions are, in general, clear, and his conclusions are sound. The article is too long to be abstracted satisfactorily, but should be read by all who are interested in plastic operations on the vagina and perineum.

Some of the details—and details are of great importance in plastic surgery—will not meet with general approval, as the extensive use of silk as suture, introduction of a strip of iodoform gauze into the uterus as a drain after every curettage, and drainage of an oozing incision by a strip of iodoform gauze.

Amenorrhea and Organotherapy.

Koehler[23] discusses the subject of organotherapy in amenorrhea, and reports several series of cases treated with different gland extracts. In general, two explanations of the effect of internal secretion in relieving amenorrhea have been given. A hypothetical deficiency of ovarian secretion being present, it may be replaced by introducing ovarian secretion in the form of ovarian or corpus luteum extracts. Or, by an indirect method, the secretion of some other gland may be employed, as the hypophysis, which will stimulate the ovary to increased activity. A third explanation is suggested by Koehler, namely, that the stimulating substance, present in both ovarian extract and pituitary extract, is not specific but belongs to a chemical group common to most or all of the glandular organs.

The experimental cases, then, fall into three groups: (1) those treated with luteo- or ovo-glandol, which theoretically have a direct replacing effect on the ovary; (2) those treated with hypophyseal extract, which has a supposed stimulating effect on the ovary; and (3) those treated with entero-glandol, an extract of small intestine mucosa, which presumably has nothing to do with the ovary. There were eight cases in the first group, twelve in the third, and several others treated with various combinations of substances. The cases in the second group are not reported in detail because the results are in accord with the favorable outcome reported in similar groups by numerous investigators. In the first group three of the eight were failures. In the third group, only one was negative, which may, perhaps, be ascribed to insufficient treatment, as the patient withdrew after a few injections. The number of injections varied from three to eighteen, at intervals of one to three days, sometimes intramuscularly, sometimes subcutaneously.

In connection with the first group, it is interesting to note the view, which is gaining ground, that the corpus luteum produces the premenstrual changes in the endometrium, and does not in itself cause bleeding. Bleeding occurs at a time when the corpus luteum is actually past its highest development and when the secretion is diminishing. In fact, bleeding will occur sometimes during and sometimes after injection. This suggests that the luteoglandol is not specific. The double effect of pituglandol, especially in the adolescent, of producing menstruation in amenorrhea and also in checking menorrhagia, is again suggestive. The fact that entero-glandol relieves amenorrhea indicates more definitely that the action is not specific.

The explanation is not clear. Perhaps all these extracts contain substances allied to the synthetic preparations which are similar to ergot—"proteinogenous amines." Further chemical investigation of these questions is important. Other interesting experimental results which Koehler notes and promises to report in detail later are from the use of luteoglandol, enteroglandol, spermoglandol or extract from the testicle, in obstetrics. The effect was as prompt as with extract of the hypophysis. In two cases of amenorrhea the injection of secacornin was followed by the establishment of the menstrual function.

Corpus Luteum and Menstruation.

Novak[24] has studied the ovaries and the endometrium in several series of cases for the purpose of throwing light, if possible, on the normal life cycle of the corpus luteum in relation to the menstrual cycle. The study includes an effort to determine whether any histologic variations in the lutein structure can be found to explain the various menstrual disorders. Very careful and exhaustive microscopical studies were made so as not to overlook anything of significance. The very early corpus luteum was found in a few cases only, but these are important as confirming the view previously suggested by others but set forth with evidence by R. Meyer, that in the human the lutein cells are derived from the membrana granulosa. The findings are described in detail. Taken in connection with menstrual histories, they suggest that ovulation occurs in the second fourth of the menstrual cycle, a view which recently has been growing in favor. The greatest development of the corpus luteum corresponds with the premenstrual hypertrophy of the endometrium. It is not clear from Novak's findings whether the cells of the theca interna do or do not develop lutein, but it is clear that the cells of the membrana granulosa do not immediately atrophy and disappear following rupture of the follicle.

It is found that though follicles are present before and after the period of menstrual life, and develop and atrophy, apparently there is no menstruation if no corpus luteum is formed. But a study of variations in the amount of menstrual flow as indicated by the histories does not seem to correspond with variations in the amount of lutein tissue in the ovary. Undoubtedly other factors—the secretions of other endocrine glands—have to be taken into consideration.

Menopause.

Culbertson,[25] in his study of the menopause, describes the phenomena of this period and presents views, chiefly from the literature, as to their significance. Apparently the best explanation is that the cessation of function of the ovary, associated with diminution and disappearance of the internal secretion of the corpus luteum, destroys the equilibrium of the endocrinous glands. There arises a functional overefficiency of the pituitary and adrenal glands, which in turn produces an arterial hypertension. There may also be hyper- or hypothyroidism.

But the vasomotor disturbances, though generally shown by hypertension, are characterized by increase and irregularity of the pulse pressure. These may be present, even in the absence of hypertension. In practice the hypertension or increase in the pulse pressure, which Culbertson finds characteristic of the menopause, can be relieved by the use of corpus luteum, preferably from pregnant animals, as there seems to be a marked difference between the "false" and the "true" corpora in this respect. Occasionally thyroid extract may be combined with it to advantage.

The results in Culbertson's hands have been most gratifying: the hypertension has been relieved and the symptoms due to vasomotor disturbance have disappeared. Detailed reports of twenty-nine cases and a comprehensive bibliography are given. A word should be said about determining the blood pressure. It is not sufficient that a single observation be made. Culbertson repeated his observations, preferably daily, through the whole course of treatment. This gives a much better idea of the peculiar and variable picture which this condition presents. In some cases the flushes and chilly feelings were found to be closely associated with changes in vascular tension.

Ovary—Blood Supply.

Sampson[26] describes in detail the variations in the blood supply of the ovary. The method of investigation is by means of x-ray pictures of specimens injected with bismuth subcarbonate in gelatine. Considerable ingenuity was exercised in the course of his studies, and several types of ovarian blood supply are described. The important practical conclusion is that since the blood supply of the tube is so closely connected with that of the ovary, and since the type of ovarian blood supply cannot be determined at operation, the tube should not be removed at hysterectomy if the ovary is to be left. If the tube must be removed, its attachment should be cut as close to the tube as possible. Interference with the ovarian blood supply necessarily follows hysterectomy, and the better the blood supply, the better the chances of continued ovarian function.

Cystic Ovary.

The surgical treatment of "microcystic" ovaries or ovaries with "small cystic degeneration" has been one of the much-discussed questions in gynecology. At one time ovaries with this affection were removed. Then resection was practised. McGlinn[27] voices a widespread opinion that they should not be disturbed or that the small cysts should be merely punctured. He has come to this conclusion because he has seen so many patients of himself and others, who, following resection, were not relieved of their symptoms, and in whom it was found at a second operation that the microcysts had recurred.

A possible explanation for these unsatisfactory results may be found as a result of the investigations of Davis.[28] The formation of the cysts has been attributed to thickening of the ovarian connective tissue, which prevents rupture of the follicles. The usual explanation has been a chronic inflammation of the ovary, nonbacterial in origin, in the absence of peritonitis and adhesions.

Davis, using the methods elaborated by Rosenow, has made a bacteriological study of a series of sixty-two cases and finds the streptococcus viridans was present in about 50%. In some the cultures remained sterile. This indicates apparently that fibrocystic degeneration may occur without bacterial infection or that the bacteria are gradually killed and the anatomical changes persist. The gonococcus was found only twice,—one acute and one chronic ovary. The Welch bacillus was found in small numbers in 33% of the cases. The significance of this finding is not clear. Certain facts are very suggestive, and point out the need of further investigation of this group.

The not uncommon history of pelvic trouble following anginal attacks during the menstrual period; the occurrence of pelvic infection following immediately after tonsillitis; the discovery of chronic tubo-ovarian inflammation in a young woman with congenital stenosis of the cervix and the uterus, with an imperforated vagina, and the isolation of the streptococcus from the left ovary; together with the experimental production of ovaritis in animals, seem conclusive proof that hematogenous infection of the ovaries occurs, and that it may be responsible for much of the chronic ovaritis in which there is not a definite history of gonorrhea or puerperal sepsis.

Ovarian Cyst Simulating Ectopic Pregnancy.

Rubin[29] reports a number of cases in which the history pointed rather definitely to the diagnosis of early ectopic pregnancy, but in which the subsequent course, sometimes operation, did not confirm the suspicions. He discusses at length the possible theoretical explanations, with some reference to the literature. In the absence of an explanation which is certain, these cases constitute the basis of an exceedingly interesting problem, and Rubin's summary and conclusions may be quoted.

"Menstruation in married women is often delayed for periods varying from a few days to a month. During this period of temporal amenorrhea, the patients naturally regard themselves pregnant. Not infrequently, physical examination in such cases of delayed menstruation will reveal the uterus actually changed in size and consistence, thus further justifying the presumptive diagnosis of pregnancy. However, in spite of this subjective and objective evidence, the diagnosis may be left in complete doubt by the onset of the menstrual flow, which apparently differs in no way from the usual menses for that particular individual. Occasionally, in addition, there may have been found on palpation an extra-uterine mass, more or less tender, which excites the suspicion of ectopic pregnancy. This extra-uterine mass may make the impression of an enlarged cystic ovary, or be more or less elongated and simulate an enlarged, dilated tube. Pain in the lower abdomen and cramps may also be complained of. In other words, there may be present the essential points in the history and physical findings of the patient to lead to the diagnosis of an ectopic pregnancy. Occasioanlly the cystic mass may be unmistakably ruptured by the examining fingers, thus further simulating a ruptured ectopic gestation sac. Yet, neither in the subsequent course nor at laparotomy, is an ectopic pregnancy proved. Instead, a retention cyst of the ovary, varying in size from a plum to a small orange, is the only abnormal finding. This cyst may be a simple retention cyst, histologically with or without lutein cells, or it may be a genuine corpus luteum cyst. These arise either as result of an early death of an intra- or extra-uterine embryo, the subjective symptoms being due wholly to the gestation itself; or arising as the result of trauma or degenerative changes in the ovary; the corpus luteum cyst may induce secondary changes in the uterus, enlarging it, softening it, prolonging the decidual (premenstrual) phase, and inhibiting the onset of the menses.

"From an analysis of the histologic findings in the cases personally encountered, it appears that corpus luteum and retention cysts of the ovary may simulate early terminated intra- or extra-uterine pregnancy without either of these conditions actually having been present. On the other hand, it is more likely that in the majority of instances these retention cysts result secondarily through early embryonal death, whether the impregnated ovum lodged within the uterus or within the tube. The ovum is in these instances disintegrated and absorbed, and restitution (involution) takes place without the external or internal hemorrhage which we are accustomed to see in uterine or ectopic abortion. In all probability, a great many non-tragic ectopic pregnancies terminate in this way."

Carcinoma of the Ovary.

The purpose of Stone's[30] review of the literature on carcinoma of the ovary and his report of cases is to call the attention of American clinicians to the not infrequent occurrence of metastatic carcinoma in the ovary—a condition recognized for some time by European observers. The "Krukenberg" tumor is nearly always a metastasis from intestinal, occasionally from breast carcinoma. It must not be forgotten that a metastasis may be larger than the original tumor, frequently true of metastatic ovarian cancer, where the ovarian growth may control the clinical picture. A primary growth elsewhere should always be considered before instituting treatment or expressing an opinion as to prognosis. So also the possibility of metastasis in the ovary should always be kept in mind by surgeons in treating primary cancer of the breast or intestine. The route of metastasis is by peritoneal implantations or through the blood or lymphatic system. There is nothing characteristic in the secondary growths, either on macroscopic or microscopic examination. Though the adenocarcinomatous type is frequent, more often the diffuse infiltrating type is observed.

Cystitis Senilis Feminarum.

Charlton[31] uses the term "cystitis senilis feminarum" to denote a condition which he regards as analogous to the well-recognized senile vaginitis, and often found in association with it and with mild inflammation of the rectum. In the senile state all the mucous membranes become more susceptible to infection, especially if slight trauma be added. It is not described in the male, perhaps because the symptoms there are masked by those due to prostatic hypertrophy, perhaps because the changes due to childbirth are important predisposing factors.

The symptoms arise gradually, generally in elderly multiparae who give no history of previous bladder trouble, and persist with remissions during the rest of the life of the individual. They are undue frequency of micturition with tenesmus and burning. Occasionally severe acute exacerbations may cause distinct physical and mental impairment. The urine is clouded with mucus and pus, rarely blood stained. There are no characteristic bacteriological findings, though some form of bacteria is always present.

The cystoscopic picture is of chronic inflammation with edematous and bullous patches. The treatment is the best of general care and hygienic control. The only drug that Charlton has found of value is pure liquid guiacol, five to ten drops after each meal. Vigorous local treatment, as with silver salts, is out of place in patients with lowered general vitality, as is here always the case.

Bacteria in the Urine.

The use of the centrifuge for detecting the presence of bacteria in the urine has been in favor for some time. The difficulty with the ordinary method has been that in the sediment there is so much material besides bacteria, especially if pus is present, that bacteria are overlooked. Certain methods of destroying pus and detritus have been satisfactory when the tubercle bacillus has been the object of search, but they are not generally applicable. Crabtree's[32] method may be called a differential use of the centrifuge. The fluid is centrifuged for one or two minutes at lowest speed. This will sediment most of the undesirable material. The supernatant fluid (cloudy) is decanted and centrifuged until it becomes clear. In the second sediment will be found the bacteria, which may be stained in the usual manner.

This may not prove as delicate a test as the guinea pig, but it gives a rapid method, which is much needed. Among fifty-five cases, controlled by guinea pig inoculation, the method failed in one in which the guinea pig later showed tuberculosis. Under proper precautions, contaminations with the smegma bacillus can be avoided.

Cystography of the Urinary Bladder.

Kretschmer[33] presents an interesting series of cystograms with various forms of disease of the bladder. Thorium nitrate was used as a routine to distend the bladder, except in the earlier cases.

Normal cases show a sharp demarcation at the vesical neck, even with a good deal of straining. It has been claimed that with straining, the posterior urethra takes part in forming the vesical neck. Of interest is another point brought out in regard to regurgitation into the ureter. Even in some normal cases fluid escaped from the bladder and cast a shadow in the ureter. How frequently this occurs, there is at present no means of determining. In certain cases of bladder infection, fluid regurgitated through a ureteral orifice which appeared perfectly normal.

The method has many limitations, and on account of the possibility of misinterpretation, can never take the place of cystoscopic examination. It is often impossible to determine from the cystogram whether deformation of the bladder is due to something internal or to something external to the organ. For outlining the number, size and position of diverticula it is the method of choice, but it may also be of use in determining whether resection or fulguration should be employed in a certain percentage of papillary tumors.

Urinary Incontinence in Women.

Incontinence of urine in women, due to interference with the continuity or function of the sphincter vesicae, is discussed by Taylor and Watt[34] on the basis of experience at the Roosevelt Hospital. The loss of control may be complete or it may occur only on special exertion, as coughing, straining, active exercise; or it may be slight and temporary, in association with over-distention of the bladder, temporary irritability of the bladder, or times of mental or physical fatigue. In general, the greater the number of children the patient had had, the more likely was she to have urinary incontinence, though it did not always occur after ten or twelve childbirths.

Urinary incontinence may be due to lesions: (1) proximal to the sphincter vesicae, (2) in the sphincter itself, and (3) distal to the sphincter. Under (1) the authors consider any cause producing increased irritability of the bladder, for example, inflammation from any cause. In the sphincter itself, the lesion may be: (*a*) an actual destruction of the muscle from injury or ulceration; (*b*) an overstretching of the sphincter by instruments in the examination or the removal of stone; (*c*) weakening of the muscle, as in advanced age or in prolonged illness; (*d*) interference with the nerve supply in some cases of disease of the nervous system. Taylor and Watt are inclined to think that the number of cases in this last group is small.

In the third group, incontinence of urine is caused by a displacement of the neck of the bladder and urethra, usually associated with a prolapse of the anterior vaginal wall and the base of the bladder. The dragging, affecting the posterior wall of the urethra chiefly if not entirely, tends to hold the sphincter open and interferes with its proper action. Any treatment (pessary or operation) which removes the drag on the sphincter will give relief. This is the largest group of cases.

In the operative treatment, attention should be paid not only to correcting displacements of adjacent organs which affect the drag on the anterior vaginal wall, as the position of the uterus and the condition of the perineum, but in taking up the slack of the anterior vaginal wall, frequently the sphincter vesicae should be infolded.

Fistulae of Urinary Bladder.

Neuhof[35] contributes a detailed experimental and clinical study of fascial transplantation into vesical defects. There are certain applications in gynecology which may be noted here, and his work in this field includes the treatment of vesical and ureteral defects. The results were, in general, very satisfactory, yet, as Neuhof says, no new principles were employed. It is careful attention to details which is important—in fact, indispensable for success. A significant detail is the method of fixing the transplant at the defect. The edges of the transplant should be sutured to the edges of the defect, not over them, as has generally been done hitherto. Trauma should be avoided, and hemostasis should be without devitalization of tissue. Fine black silk sutures were used and preferably transplants of fascia lata. "Large vesical defects up to about one-half the bladder were replaced by fascia, with uniform success."

The functional and anatomical results were excellent. Epithelial overgrowth was complete at an early stage, with new-formed bladder wall as thick as the remainder and as resistant to internal pressure. Bone was deposited invariably at the site of the defect. In the connective tissue occupying the defect, generally replacing the transplant, was found smooth muscle continuous with the muscle of the bladder wall.

The immediate anatomic and functional results of replacement of extensive ureteral defects by tubes of fascia were satisfactory. The tube is best formed over a glass rod at a previous operation, leaving the tube and rod in place until the time of the operation on the ureter. The ultimate results on this small series of cases could not be determined, on account of the death of the dogs, one from hemorrhage and two from unknown causes. No clinical cases belonging to the group of ureteral defects are reported. But the method offers great hope of further progress.

Constitutional Factors in Gynecology.

The conception of the human body as an aggregation of individual cells led to great changes in the view of disease, and gave a great impulse to the study of structure. A vast amount of information has been acquired, largely undigested material as yet because of the failure to discover underlying and unifying principles. There have been protests from time to time against Virchow's "cellular pathology," because of its incompleteness, and Noble[36] not only adds to the protest but formulates some opinions of recent growth.

In his introductory paragraph he says: "In this contribution on the constitutional factor in gynecology and obstetrics, certain principles will be presented which are demonstrated by biologic, human clinical pathological, pathological, human antenatal pathological, comparative pathological, or by experimental teratological evidence, or by a combination of such evidence." If in that sentence, the word "demonstrated" is replaced by the word "suggested," the reader will proceed with more assurance. That the subject may be regarded as chaotic and the principles inchoate may be inferred from the text. But the point of view is one which needs emphasis, perhaps can be overemphasized with difficulty.

Disease is not an entity but "the reaction of an organism to an environment sufficiently unfavorable to produce either local or general discomfort or other disorder functions." It is also clear that the type of reaction will vary with the type of the organism, or with its constitution.

Various types of human organism have been described, but the grouping selected by Noble is perhaps the most general. The constitution of an individual depends on what he inherits and what his environment makes him, using the word "environment," in the most general sense. If the stock, or heredity, is sound and he has not been injured by environment, he is a typical individual, designated as an evolute. An individual presenting any deviation from this typical condition is called a devolute. The hereditary factors may be defective or unsound, giving a hereditary devolute; or the individual may be an environmental devolute; or if both factors are defective, a mixed devolute. The old groups of fevers, as sthenic, nervous or irritable, asthenic and mixed or nondescript, correspond to these four types of individuals and are seen in them if infection occurs.

"The diseases and morbid states which constitute gynecology fall into a few groups:

(1) Infections: (*a*) of the mucous surfaces of the genito-urinary tract, (*b*) of the peritoneum; and of the tissues, celluar, glandular, and muscular, contiguous to both.

(2) Malpositions and more especially ptoses of the pelvic and abdominal viscera.

(3) Tumors: (*a*) benign, and (*b*) malignant.

(4) Lacerations.

(5) Hypoplastic states of organs or systems of organs arrested in their development; a few from hereditary causes and most of them from environmental causes.

(6) Functional psychic and somatic disorders due to maladjustments of sexual life.

"The above grouping constitutes the whole of gynecology in principle."

"A careful and discriminating analysis of the types of disease and of morbid states which constitute the department of medicine called 'gynecology' will show either that the constitutional element is the dominant factor in these conditions or else that it enters very largely into them."

Scientific treatment, then, of all conditions except those due to traumatism, must be constitutional in character. The weight of evidence as to tumors is tending to support this view; and the facts of experimental teratology lend support to the same hypothesis.

Certain obstetrical problems are explained genetically by the application of the principles enunciated above, as many cases of sterility, certain toxic states, hypersensitive nervous conditions and certain lacerations. It is because a complete study of woman is necessary for an adequate understanding of her nature that the chief grounds for the existence of the specialty of gynecology and obstetrics are based. Incomplete study will lead, as it has led in the past, to numerous sins of commission in the way of unnecessary and useless operations.

Psychiatry and Gynecology.

Barnes[37] reviews briefly some of the literature on the relation of diseases of the genital system in the female to diseases of the mind, sums up the evidence, criticizes the arguments and theories, and presents an excellent summary of views. There is very little evidence that disease of the genital system causes disturbed mental states which may properly be called psychoses, though disturbances of the mind and of the genital system occur together often enough, in fact, about as often relatively as disease of the genital system occurs with a normal mind. While the details of his discussion cannot be given here his closing sentences are worth keeping in mind.

"The history of the development of medical knowledge is marked by the evolution and decay of fads and fancies such as we have had under consideration. The calm judgment of the majority, both psychiatrists and gynecologists, tends at present strongly to the belief that in female genital disease or dysfunction we do not find a cause of insanity, and that gynecological treatment, even where indicated, cannot be recommeneded as a cure for the psychoses."

Peritoneum and Foreign Bodies.

Cubbins and Abt[38] undertook a study of the effect of certain foreign bodies in the peritoneal cavity. Many substances have been recommended in the treatment of peritonitis and to prevent adhesions, without sufficient experimental basis. The conclusions from this present study, as reported in a preliminary article, are as follows:

Iodine is an intense irritant of the peritoneum, and favors rather than inhibits bacterial action. It will produce firm fibrous adhesions with or without any manipulation of the peritoneum. As to ether, they believe that patients recover in spite of its use, rather than because of it, and they found that the immediate mortality in dogs without manipulation was nearly 40%. In about half of the dogs which survived, adhesions had formed. Vaseline is an intense irritant to the peritoneum of a dog, and is absorbed very slowly if at all. White vaseline, lanolin and albolene seem to have a similar effect. Paraffine oil (Russian) is relatively nonabsorbable, and although far less irritating than vaseline, does not prevent adhesions. Olive oil has little effect in preventing adhesions, is absorbed slowly and has little or no irritating effect upon the peritoneum.

Posture in Abdominal Drainage.

Hill[39] discusses the effect of posture in abdominal drainage, considering the Fowler position, the prone position, and the lateral position. He holds that the posture in which the patient is placed following operation contributes materially to his recovery, and also believes the prone and the lateral positions are much superior to the Fowler. For many reasons, the prone position is the best, but the discomfort prevents its use. It is not as uncomfortable, however, as might be supposed. The head of the bed should be elevated ten or twelve inches, a pillow is placed under the lower part of the chest and another under the head, giving ample room for breathing. While drainage through the abdominal wall is now rarely used in gynecological cases it is sometimes necessary, and it is well to keep in mind the mechanical advantages of posture other than the dorsal.

Post-Operative Gas Pains.

Queen[40] reports the results in a series of one hundred and fifty abdominal operations, following the method suggested by Bonnot for prevention of gas pains. The post-operative course was uniformly satisfactory as far as distention and gas pains were concerned, and in a large percentage of the cases the bowels moved in forty-eight hours after operation without a purge. Thirty-one per cent. of the cases had been drained and emergency cases seemed to do as well as those that had been prepared.

The method (modified by Queen) is to give ten-grain doses of muriate of quinine in two ounces of water by rectum. The first dose is given immediately after operation, repeated every four hours for four doses, then every six hours for four doses. It was found that if only four doses were given (original method) gas pains would come on when the treatment was discontinued. Only one patient had to be catheterized, and backache was practically eliminated.

Vaginal Secretion.

Harada[41] has investigated the nature of the bacteriocidal property of the vaginal secretion. Since Doederlein in 1892 declared the vaginal secretion to be bacteriocidal in nature there has been considerable study of the question, in general resulting in confirmation of this point, though not all agree with the explanations given by him. On account of the diversity of opinion, Harada has carried out and described a detailed study of the vaginal secretion from the bacteriological and from the chemical point of view.

He finds that the bacteriocidal property of the vaginal secretion is gradually increased during pregnancy, but that during this period the lactic acid, sometimes present in quantities as great as .9%, suffers no increase. Though lactic acid has definite bacteriocidal properties, it is not alone responsible for the well-recognized characteristic of the vaginal secretion. Other factors are the presence of substances derived from leukocytes which occur in large numbers in the vaginal secretion in pregnancy, namely "leukin" and "cytase," or substances closely allied to them. Harada thinks, from his experimental studies, that in producing the bacteriocidal effect, the tissue juices, the lack of oxygen, the vaginal bacillus and its products are of little, if any, significance—contrary to the statements of Menge and Kroenig.

Pituitrin in Postabortion Curettement.

Furniss[42] suggests the use of pituitrin in postabortion curettement. One cubic centimeter is given hypodermatically fifteen minutes before the operation. The operation is much more easily performed, the uterus is in firm contraction and the bleeding much less. Furniss thinks the risk of uterine perforation is lessened. Should bleeding occur later, ergotole may be given, but no occasion for its use has arisen so far.

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Book Reviews.

Localization by X-rays and Stereoscopy. By Sir James Mackenzie Davidson, M.B., C.M. (Aberd). New York: Paul B. Hoeber. 1916.

The European War has brought into considerable prominence the discussion of surgical methods of locating foreign bodies in the human tissues. The increased variety of means now available for this purpose, and the application of mathematics for their employment, make possible much more elaborate procedures than have ever before been used. These have been discussed extensively in current medical literature. Sir James Davidson's monograph, carrying, as it does, the authority of one of the leading British radiologists, aims to deal in detail with the application of the roentgen ray, by photography and by stereoscopy, to the solution of the problems arising from deeply buried foreign bodies. After a preliminary description of the x-ray tube and of secondary rays and x-ray protection, the author describes successively the technique of stereoscopy, methods of rapid x-ray localization, and emphasizes particularly the cross-thread method, with the use of three coordinates, for purposes of precise localization. In his preface he calls particular attention to the chapter dealing with the localization of foreign bodies in the eye ball and orbit. A series of appendices describe respectively the use of a telephone attachment in surgery, the electromagnet as an aid to localization, the method of localization from a single photograph, the rectification of the current supplied to the x-ray tube, and rules for the protection of the x-ray operator. The book is illustrated with a series of thirty-five stereoscopic figures on special plates and with other cuts in the text, making a total of sixty-one. The volume should be of great practical value, not only to military surgeons during the war, but in civil practice for dealing with industrial injuries associated with the lodgment of foreign bodies.

Focal Infection. By Frank Billings, Sc.D., M.D. New York and London: D. Appleton and Company. 1916.

This monograph, representing the Lane medical lectures delivered by the author in September, 1915, at the Stanford University Medical School, presents a study of the etiologic relation of focal infection to systemic diseases, based on the clinical experience of the Rush Medical College in affiliation with the University of Chicago and the Presbyterian Hospital for the past dozen years. The material is presented in five chapters dealing respectively with the site, etiology and other phenomena of focal infection; the transmutation and specific tissue affinities of the streptococcus-pneumococcus group of organisms; the acute diseases and the chronic diseases related to focal infection; and the methods of treating not only the focal infection but the resulting acute and chronic systemic diseases. The work concludes with a selected bibliography of fifty-seven titles. The importance of this publication will be appreciated by all who have grasped the significance of localized foci of infection as distribution centres and reservoirs of recurrent or chronic systemic diseases. The clinical application of principles here experimentally demonstrated and systematically described should, in time, have a notable effect on the general health of mankind, the prevention of disease incidence and the improvement of total human efficiency. The book is well illustrated with a series of 68 text figures.

The Diagnosis and Treatment of Heart Disease. By E. M. Brockbank. New York: Paul B. Hoeber, New York. 1916.

This little book of 120 pages is an amplification of an earlier work entitled "Heart Sounds and Murmurs, Their Causation and Differentiation." It is obviously intended as a summary to supplement instruction in the University of Manchester, England. It has the merits and the usual objections of the pocket manual. It gives the author's personal viewpoints, but at the same time omitting much material that in this country, at least, is usually considered important.

THE BOSTON
Medical and Surgical Journal
Established in 1812

An independently owned Journal of Medicine and Surgery published weekly, under the direction of the Editors and an Advisory Committee, by the Boston Medical and Surgical Journal Society, Inc.

THURSDAY, NOVEMBER 22, 1917

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VENEREAL DISEASES AT THE FRONT.

There have lately been discussions in private and in the press as to whether the nation is or is not bound to suppress prostitution as well as to condemn it more or less discreetly. These discussions are sometimes super-subtle. Experienced physicians will probably ask whether much is gained by holding up to public reproach one class, when, as the course of the war shows, venereal diseases are symptomatic of the trend of events in various classes connected, as Signor Salandra said recently, directly or indirectly, with the war. The debate in the newspapers and in public speeches during the month is not very satisfactory to any party concerned. The discussion leaves no one nearer a solution of the problem.

The unpleasant fact is that venereal diseases are an insidious, far-reaching and deadly evil, and their peculiar contaminations are by no means confined to professional prostitutes. It is a commonplace of medicine that syphilis, in particular, is now epidemic and familial in countries which are the scenes of immediate war. The facts about syphilis and gonorrhea at the front are thrust into the limelight by two writers expert in the social and medical aspects of venereal diseases. It is useless to gloss over these facts which are now published in the *Annales des Maladies Venériennes* and in a pamphlet by M. Adler, Chef de la Sûreté at Lyons. Like many articles in the French language, they are brilliantly true, with a clean, direct veracity, all made up of merciless logic and unanswerable common sense. Above all, there is no confusion, no dust from a new broom, such as fools the people in popular and semi-scientific or semi-official stuff. M. Soulier, who writes the medical view, expresses with M. Adler a universal human feeling in the light of a vivid national crisis; he wishes to save the military population of France from such a fate as authorities like Gaucher see in store for it. The principal thing of which they complain is social contamination, a phrase which seems to cover every impure sexual act. Free trade, as it were, in venereal diseases has become a phase of malignant war that imperils the nation's health and future. The importance of this detail cannot be ignored. Both in the towns and near the trenches soldiers are being grievously infected with syphilis and gonorrhea. M. Soulier and Professor Gaucher do not hesitate to assert that the prevalence of these plagues is horrible. Complete figures have not yet been published, but statistics of Gaucher's clinic at the Saint Louis Hospital during the first two years of war give some conception of the serious mischief which almost certainly is now being caused by the spread of syphilis. In his address to the Academy of Medicine, he said: "Whereas, *before the war*, there were, in round numbers, 300 recent cases of syphilis in 3000 patients at our clinic, or 1 in 10, in the first months of the war we had 800 cases of recent syphilis in 5000 patients, or 1 in 6. In the eight months that followed, our statistics show 600 cases in 2300 patients, or 1 in 4. Thus, in the first sixteen months of war—from August, 1914, to the end of December, 1915—syphilis increased by more than one-third, by nearly one-half; while in the eight subsequent months—January to August, 1916—it increased by more than one-half, by two-thirds. . . . . . Syphilis generally has increased by more than one-half, by two-thirds." Its effects and after-effects are comparable with those of war itself. It now takes rank with alcoholism and tuberculosis as national scourges.

M. Adler, in his *Rapport administratif*, shows that there are in France today no laws, ordinances, or decrees with regard to prostitution as a source of contamination, physical and moral. Hitherto misled by the national custom of tolerating vice, the people have made excuses for the culpable negligence of the authorities, saying that short of imprisoning every woman who approaches a military camp and absolutely cancelling all military leave, it is impossible to prevent soldiers from running the risk of infection. Since the mobilization in 1914, youthful life has been penalized by the indifference of the public whose mock-modesty has been blind, deaf and persistently wrong. Near the front, for example, the ravages of venereal diseases form a serious calamity. Great harm is done to young soldiers of 19 and 20 years of age by the display on the streets. Its daily appeal is an intensive cultivation of vice, and is particularly mischievous in the case of youths, excited by war and out of touch with their normal selves. This being the psychological atmosphere, remarks M. Soulier, imagine the coming of over-seas contingents, of hundreds of thousands of negroes, Moroccans, Somalis, Kabyles, Tunisians, Annamites, and Chinese, who bring with them ancient blood full of the syphilitic toxin which speedily makes war on the conscript's health.

How to hold in check these men of various nations who are inclined to expose themselves to infection is a problem that medical science must solve. Prophylaxis is important, but an even more important consideration is raised by the question how far it is possible to deal with venereal diseases by inspection of these troops. A committee of the Academy of Medicine, composed of Pinard, Balzer, Gaucher, Kirmisson, and Vaillard, reported that in view of the fact that infection had been greatly spread by the arrival of over-seas contingents, inspection at port and in the home camps was necessary. They look at the reasons with clearness. When these contingents arrive the population passes all at once into a febrile mood of exaltation. Drink flows, excitement multiplies itself, and the scene becomes a carnival. No one capable of discerning the spirit of such occasions can possibly fail to realize that its whole tendency is relaxing and enervating. It is in this environment that venereal diseases flare up and spread. Sir William Osler has written a strong warning against these dangers. Syphilis in seaports is a special brand. From reports that have reached us, we can endorse this statement. French physicians are endeavoring to improve the moral and sanitary conditions of seacoast towns by regular visits and inspection. But this most useful and necessary campaign has not yet received from the public and the government the frequent support which its value to the State requires.

* * *

THE RELATION BETWEEN TEMPERATURE AND PULSE CURVES.

It is no longer considered thorough to treat disease, especially acute infectious disease, whether self-limiting or not, without keeping an accurate record of temperature, pulse and respiration. But unless these records are graphically portrayed the relation between them is not easily followed. Ordinarily, both the pulse and respiration are increased with a rise in temperature, and these increases are characteristic of the febrile reaction. Except for a few conditions, however, particularly where there is meningeal irritation, the respiratory curve does not assume any significant characteristics. The pulse curve, to a lesser degree than the temperature curve, has a tendency to assume characteristic shape, depending upon the particular disease, upon the stage of the disease, on the condition of the patient and upon the presence of complications. The form of the pulse curve is more nearly an index of the condition of the patient no matter what the disease; the temperature curve is of special diagnostic significance in certain of the acute infectious diseases, such as malaria, typhoid fever, relapsing fever, septicemia and pneumonia, especially in the latter's sudden critical drop. In these diseases a view of the temperature curves is alone sufficient to establish the diagnosis of each disease. The fall of temperature to normal usually long precedes the fall of the pulse to normal rate or quality, principally because the fall of the temperature indicates merely the cessation of further reaction between the system and the infecting organism. The pulse usually remains high until the toxins have been entirely eliminated and the damage by the toxins entirely overcome. The pulse curve does not usually follow the ups and downs of the temperature curve. In some diseases the pulse is characteristically rapid, quite out of proportion to the high points reached by the temperature curves; or the pulse curve may be low, much lower in proportion even to the low points of the temperature curves. But whatever the relation between them, as long as it is maintained the disease is progressing as it should progress. There is danger only when this relationship is interrupted. In scarlet fever, for example, the rapidity of the pulse and the heights it may attain, especially in young children, is quite beyond that attained by the temperature, and if this is understood no special apprehension need be had on this account. In typhoid fever, on the other hand, the pulse curve is comparatively low, and must not of itself be given a special—favorable—prognostic significance. A close study of the temperature and pulse graphs in self-limiting diseases will disclose a fairly constant curve for each in uncomplicated cases. The pulse curve is, however, most unstable and sensitive to change. Graphic curves are especially valuable in following the progress of a disease and in warning of the onset of complications. Almost any complication, no matter how mild, will alter the course of the individual curve, but especially the relation between them. In typhoid fever, for example, perforation or hemorrhage is ushered in by a decided and an abrupt drop in the temperature and by a marked rise in the pulse rate. While normally the general direction of the two curves is alike and parallel, with either of these two complications the two curves cross each other. But a relapse would be indicated by a rise in the pulse rate long before a change in the temperature curve would be manifested.

In any event, the significant and dangerous feature in the relation between these two curves lies in low temperature and high pulse rate. In any self-limiting disease having characteristic temperature graphs a change in the shape of these curves must always act as a warning of complication or disaster. In the abstract, temperature—even very high temperature, except extreme hyperpyrexia—has little prognostic significance. The presence of temperature is merely an indication of a reaction that the human organism is making in response to the attacking infective agent. In profound debility or in terminal infections there is little or no rise in temperature because the organism has not enough vitality to respond. Indeed, where the physical and the clinical signs and symptoms show the presence of pathological processes that ordinarily call for a rise in temperature, low temperature is of grave prognostic significance. But in these cases, even though the temperature remains low, the pulse has assumed a serious mien. The rise of the pulse rate, except where it can be ascribed definitely to nervous conditions or disturbance of certain of the glands of internal secretion, is always of grave significance. Temperature alone may be caused by many innocent conditions, the pulse is always of concern. The pulse is the gauge from which is read the condition of the patient. A study of the interrelation between the temperature and pulse graphs will indicate the stage of most self-limiting diseases, the progress, the onset of complications and, very often, even the prognosis. As much, if not more, aid is afforded in the diagnosis, prognosis and treatment of the patient by the graphic record as is afforded by any other clinical or laboratory assistance—and these graphs deserve even much more attention than often is afforded them.

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THEORIES OF LONGEVITY.

THE quest for youth and the prolongation of life has been the goal of mankind from the earliest periods to the present day. While it is an accepted truth that "that which lives must die," it is not at all certain that death is the universal accompaniment of life. Minot calls attention to the fact that in many of the lower forms of life death does not occur, in so far as we at present know, as a necessary and natural result of life. On the other hand, some of the lower species live out their cycle of life very rapidly. On the whole, the rapidity of development influences the length of life. The more rapid the development, the more rapid the decline. It is for this reason that precocity, whether mental or physical, is not of congratulatory significance, as might appear on first impression. The limit of human life must be embraced within its particular cycle of life, and prolongation of life must be through an amplification of this cycle. The average life during the Dark Ages was 12 years. Its prolongation to the present average of about 50 years has been accomplished almost entirely through modern preventive medicine and endeavors of all sorts, but especially along the path of human welfare. No one can tell how far this limit may be extended. Neither the 100 years of Luigi Cornaro, nor the 152 of Thomas Parr, nor even the incredible age of 370 years recorded by James Easton, need be the end of the chase.

Of the many theories advanced in this connection, three stand out most prominently: those of Metchnikoff, Arnold Lorand and Montgomery. Perhaps the most romantic of these is Metchnikoff's, who ascribed old age to intestinal intoxication from retained waste products. He believed that if intestinal putrefaction could be controlled, life could be prolonged. It was for this reason that he advocated the use of lactic acid bacilli in order to retard the growth of intestinal flora. In addition, he advised intestinal lavage to maintain the intestinal toilet. There is no doubt that the effects of intestinal stasis and abnormal putrefactive changes in the intestinal canal are many, yet the dangers of these conditions and the causation thereby of autointoxication are much overdrawn. Ordinarily, not much of the intestinal matter once discharged into it is reabsorbed to cause symptoms, at least not as regards true fecal matter. Poisoning from the intestinal tract is brought about rather from non-fecal matter, matter not affected by the digestive juices and not reduced to the fecal state. Fecal matter alone in the intestinal canal does no harm. The colon is a reservoir purposed for the retention of fecal matter, and there is no known time limit after which the colon will lose its function as a reservoir. Lorand's theory of longevity has to do with the ductless glands. Because the subject of the glands of internal secretion has assumed vast proportions, this theory cannot easily be dismissed. In all probability these glands have more to do with the intricate processes of "life" than any other part of the organism. Lorand believed that atrophy and degeneration of the ductless glands—of the thyroid, the adrenals, the pituitary gland, the ovaries and the testes, but especially the thyroid—was the direct cause of old age. He points to the aged appearance of the myxoedematous and the cretenoids as suggestive of this opinion. Undoubtedly the maintenance of the physiological balance between these glands is productive of better health and longer life, but whether these glands are the sole arbiters of the question of length of life must needs still be an open question. The last of these three theories of longevity has to do with the excretory functions. "The limit of life is a matter of excretion." But this is platitude, since it is obvious that life cannot continue when the excretions cease and is limited when they do not functionate properly. Montgomery's theory is merely an amplification of Metchnikoff's, since the latter harps only on the one channel of excretion—the intestines. Instead of a mere autointoxication, Montgomery goes further to say that the retained waste matter transforms parenchymatous tissue into fibrous tissue and thus shortens life. There is no doubt that the degenerative diseases, as they affect particularly the excretory functions, are the chief factors that keep the mortality high and life short in the face of the great reductions in epidemic diseases. While the latter have been reduced, the former have increased enormously. Were this element eliminated there is no question but that life would be very much lengthened—to what degree no one can say. In the reduction of the degenerative, sclerotic diseases must be found the "fountain of youth." But to whatever theories of longevity one subscribes, the fact remains that the prolongation of life is a problem for the scientist, for the hygienist and for the welfare worker. Preventive medicine, the simpler and happier life, better sanitation, may increase the span of life even beyond the fondest hopes.

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MEDICAL NOTES.

HOSPITAL BEQUESTS.—By the will of the late Mary Warden Harkness of New York, Morristown Memorial Hospital and the Germantown Dispensary and Hospital each receive the sum of $100,000.

SMALLPOX IN MAINE.—The epidemic of smallpox which centered in Gardiner, Me., is believed to be checked. There have been reported between 75 and 100 cases, all in mild form. The schools reopened on November 19th, and all pupils were vaccinated. Churches and public libraries were closed and moving picture houses requested to suspend. Fort Fairfield reported 21 cases and Presque Isle, three.

WAR NOTES.

INDUSTRIAL HYGIENE IN WAR TIME.—At a meeting of the Massachusetts Association of Boards of Health, held recently at Pittsfield, Dr. W. Gilman Thompson of New York made an address on industrial hygiene in war time.

In its special provinces the Council for National Defense has taken advantage of the experience of Dr. Thompson in the consideration of two problems: the planning of dispensaries for the treatment of industrial diseases, to be located near groups of large plants; and, second, the formulation of health standards for munition factories.

Dr. Thompson recommended the frequent periodic examination of all workers.

"Despite the best of conditions, some poisoning may occur, but, on the other hand, in the group of high explosives now in favor, TNT and its relatives, the symptoms are well defined and easy of observation. Owing to care in this matter and the enforcement of examinations, no fatal cases of TNT poisoning have been known at the duPont works, although in the beginning of the war such deaths were in considerable numbers in the factories abroad.

"Milder forms of the same kind of poisoning are to be noted in the peace industries allied to powder making, namely, the dyestuff manufacture. From its readiness to absorb through the skin, the human organism is liable to a good deal of trouble when it comes to handling the anilines. That these industries will be subject to enormous expansion here when attention can be given to them is without question. The study of such industrial poisons is, therefore, today a most important problem, for, in the absence of antidotes, the most reliable defense must be prevention, and this can be accomplished through the education of the employees to the dangers."

NEW GOVERNMENT HOSPITAL.—The Little Wanderers' Home building on West Newton Street, Boston, now the property of the Salvation Army, will be taken over by the Government to be used as a hospital for soldiers and sailors suffering from insidious ailments. The doctors on the staff of the dispensary connected with the social centre and nurses from the Salvation Army Home for Nurses of Dorchester have offered their services free.

APPOINTMENT FOR FRENCH WELFARE WORK.—Dr. Maynard Ladd, physician-in-chief of the hospital for children of the Boston Dispensary, has been appointed associate director of child-welfare work in France, which is one of the activities of the Red Cross. His assistant, Dr. Robert Sharpe, will accompany him. Dr. Elmer W. Barron will assume charge of the work at the Boston Dispensary.

GIFT OF RECONSTRUCTION HOSPITAL BY ELKS.—It is announced that the Elks have made a gift of $250,000 to the Government to build the reconstruction hospital on Parker Hill, Boston. The gift has been accepted and the Government will construct a complete unit of twin ward hospital buildings, vocational workshops, barracks, mess hall and post exchanges. This hospital will be the first of its kind to be erected.

SHORTAGE OF AMBULANCES.—Lt.-Col. Brooks of the Massachusetts State Guard has pointed out the great shortage of ambulances in this State, owing to the demands of the war. In the event of an extensive fire or riot the State Guard would be greatly handicapped by this shortage. At a conference of Knights of Pythias deputies, held in Boston, at which Lt.-Col. Brooks made this statement, a fund was begun to provide for this deficiency.

ADDRESS BY SIR BERKELEY MOYNIHAN.—The New York State Committee of the Council of National Defense, on November 8, gave a dinner in honor of Sir Berkeley Moynihan. Major George W. Crile of Cleveland, O., director of United States Base Hospital No. 4, was also a guest of honor at the dinner. In discussing the war, Sir Berkeley Moynihan made these pertinent remarks: "Germany is stronger today than ever before. She says she can put in the field from 1,000,000 to 1,500,000 fresh men every year. She is ruthless and implacable and most efficiently organized. Germany is going strong. She will not be conquered from within; she must be conquered from without by you and us. America must prepare herself for a war that is long and arduous. I am asked how long the war will last. I will say for America that the war for her will have just begun when every man of military age will have offered his life to his country; when your wealth, your souls and your honor have been offered; when you have mourned your honored dead by the hundreds of thousands."

WAR RELIEF FUNDS.—On Nov. 17 the totals of the principal New England war relief funds reached the following amounts:

French Wounded Fund	$297,501.59
Armenian-Syrian Fund	248,919.07
Surgical Dressings Fund	137,400.26
Permanent Blind Fund	128,122.99
Metropolitan Red Cross Fund .	88,689.75
French Phthisis Fund	70,337.21
Italian Fund	51,796.94
War Dogs' Fund	1,903.25

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending Nov. 17, 1917, the number of deaths reported was 223, against 200 last year, with a rate of 15.06, against 13.72 last year. There were 32 deaths under one year of age, against 32 last year.

The number of cases of principal reportable diseases were: diphtheria, 109; scarlet fever, 33; measles, 82; whooping cough, 31; typhoid fever, 5; tuberculosis, 41.

Included in the above were the following cases of non-residents: diphtheria, 9; scarlet fever, 5; tuberculosis, 6.

Total deaths from these diseases were: diphtheria, 7; whooping cough, 1; typhoid fever, 1; tuberculosis, 27.

Included in the above were the following non-residents: diphtheria, 5; tuberculosis, 6.

HOSPITAL BEQUESTS.—By the will of the late Richard B. Sewall of Boston, each of the following institutions receives the sum of $25,000: Massachusetts Charitable Eye and Ear Infirmary, Massachusetts General Hospital, and the Children's Hospital. The Convalescent Home of the Children's Hospital at Wellesley receives $15,000.

THE CANCER COMMISSION OF HARVARD UNIVERSITY.—Until further notice meetings will be held under the direction of the Cancer Commission every Friday in the faculty lunch room of the Harvard Medical School. One or more subjects, followed by discussions, will be presented during the luncheon. The first speaker will begin promptly at 12.30 o'clock. No formal announcement of the program will be made by the committee and no notice will be sent out, but all who are interested are invited to attend and take part in the discussion. Luncheon will be served *à la carte.*

MEETING OF MEDICAL EXAMINERS.—The Massachusetts Medical Service Association held its semi-annual meeting on November 8, at the home of its president, Dr. John Hall Smith, Cambridge. The subject under discussion was the voluntary aspects of industrial health and accident insurance.

SPRINGFIELD ACADEMY OF MEDICINE.—The November meeting was held at 137½ State Street, Springfield, on November 13. Dr. W. R. MacAusland of Boston spoke on "Mobilization of Stiff Joints by Arthroplasty."

Academy Note: The teaching courses will begin early in January.

DR. L. D. CHAPIN, *Secretary.*

The Massachusetts Medical Society.

GENERAL OFFICERS.

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SAMUEL B. WOODWARD 58 Pearl Street, Worcester

Vice-President

GEORGE P. TWITCHELL 17½ Federal Street, Greenfield

Secretary

WALTER L. BURRAGE 282 Newbury Street, Boston

Treasurer

ARTHUR K. STONE 44 Fairfield Street, Boston

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EDWIN H. BRIGHAM, Brookline
8 The Fenway, Boston

NOTES FROM THE DISTRICT SOCIETIES.

DISTRICT CORRESPONDENTS.

Berkshire, A. P. MERRILL, M.D., Pittsfield.
Bristol North, ARTHUR R. CRANDELL, M.D., Taunton.
Bristol South, EDWIN D. GARDNER, M.D., New Bedford.
Essex North, T. N. STONE, M.D., Haverhill.
Essex South, H. P. BENNETT, M.D., Lynn.
Hampden, LAURENCE D. CHAPIN, M.D., Springfield.
Hampshire, E. E. THOMAS, M.D., Northampton.
Middlesex South, WILLIAM C. HANSON, M.D., Belmont.

WORCESTER DISTRICT MEDICAL SOCIETY.—The last regular meeting of the Society was held on Nov. 14, 1917, at 4.15 P.M. Subject: "Health Insurance."

Because of its vital interest to us as physicians and taxpayers the officers ventured to devote another meeting to this matter, now being studied by a recess commission of the Massachusetts Legislature.

Heretofore men of our profession have been leaders in the political and social thought of their communities and it is becoming to us as citizens now, in the face of impending legislation of a character so radical that it must needs profoundly affect our economic position, to inform ourselves fully in the principles involved and see to it that such information reaches the general public.

Whatever the final outcome of the present agitation for and against these measures, it is our duty to protect our community and ourselves from possible disaster by exerting all the weight of our influence on the side of just, sane and workable provisions—worthy of Massachusetts tradition.

To the end of securing information from different points of view, the officers invited the presentation of:

1. That of Union Labor—by Mr. William H. Haskins of Central Labor Union.
2. That of the Manufacturer—by Mr. Harry W. Goddard of Spencer Wire Co.
3. That of the Physician—by Dr. F. W. Anthony, Haverhill, of the M. M. S. Com. on Health Insurance.
4. General Discussion.

REVISED LIST OF PHYSICIANS IN MILITARY SERVICE OF THE UNITED STATES OR THE ALLIES.

U. S. Army: Dr. Joseph O'Connor, Worcester; Dr. Howard Beal, Worcester; Dr. Edw. B. Bigelow, Worcester; Dr. Frank W. George, Worcester; Dr. Roger Kinnicutt, Worcester; Dr. E. B. Simmons, Worcester; Dr. William E. Denning, Worcester; Dr. Willard Lemaire, Worcester; Dr. James J. Goodwin, Clinton; Dr. Chester C. Beckley, Lancaster; Dr. Roger Schofield, Worcester; Dr. Merrick, Lincoln, Worcester; Dr. George C. Lincoln, Worcester; Dr. E. S. Phelan, North Brookfield; Dr. R. S. Newton, Westboro; Dr. William J. Fay, Worcester; Dr. A. K. Yoosuf, Worcester; *Dr. James V. May, Worcester; Dr. Samuel C. Gwynne, Worcester; Dr. Harry P. Cahill, Worcester; Dr. Israel Lurier, Worcester; Dr. Donald Gilfillan, Worcester; Dr. D. F. O'Connor, Worcester; Dr. Homer Gage, Worcester.

U. S. Navy: Dr. Gilbert Haigh, Worcester; Dr. Louis Johnson, Worcester; Dr. Thomas Courtney, Worcester; Dr. Joseph L. Lannois, Northboro; Dr. Winthrop Adams, Worcester.

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* Honorably discharged.

English Army (Harvard Unit): Dr. Kendall Emerson, Worcester; Dr. Oliver Stansfield, Worcester; Dr. Stanley Bridges, Worcester; †Dr. George Watt, Worcester.

English Hospitals: Dr. Albert O. Raymond, Worcester; Dr. William H. MacKay, Worcester.

American Ambulance (Paris): Dr. W. Irving Clark, Worcester.

Commissioned but not yet called to active duty; Dr. George F. Little, Uxbridge; Dr. Willard P. Stapleton, Worcester; Dr. Frank T. Oberg, Worcester; Dr. H. L. Simmons, Worcester; Dr. Charles Salmon, Worcester.

Commissioned as medical members of local selection boards for the National Army: Dr. James C. Austin, Spencer; Dr. Edw. W. Balmer, Whitinsville; Dr. J. Arthur Barnes, Worcester; Dr. Frederick Bryant, Worcester; Dr. John F. Harkins, Worcester; Dr. Ernest L. Hunt, Worcester; Dr. William C. McKibben, Worcester.

Commissioned as Medical Officers of Massachusetts State Guard: Dr. L. F. Woodward, Worcester; Dr. C. A. Sparrow, Worcester; Dr. Roy J. Ward, Worcester; Dr. Frank L. Magune, Worcester; Dr. George F. H. Bowers, Worcester.

The Medical War Committee invites information to supplement or correct this list. Doctors joining the Colors should notify the Committee and indicate their wishes with regard to sharing the fees derived from their patients.

M. F. FALLON, *President*,
E. L. HUNT, *Secretary*.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY.—Dr. J. B. Blake was the guest of the Lynn Medical Fraternity on November 6. Subject: "Informal Talk on the Medical Aspects of the War."

The next meeting of the Essex South Society was held in Beverly, November 20. Dr. F. B. Lund was the guest.

PHYSICIANS IN GOVERNMENT SERVICE NOV. 1, 1917.

U. S. Army Medical Reserve Corps: N. P. Breed, Lynn; H. L. Davis, Lynn; E. M. Dolloff (Homo.), Lynn; L. M. Hassett, Lynn; C. L. M. Judkins, Lynn; W. V. Kane, Lynn; G. H. Kirkpatrick, Lynn; W. F. Lemaire, Lynn; L. H. Limauro, Lynn; E. A. Merrill, Lynn; O. C. Spencer (Homo.), Lynn; J. W. Trask, Lynn; DeW. S. Clark, Salem; E. A. Rushford, Salem; G. C. Parcher, Saugus; A. P. Chronquest, Danvers; P. P. Johnson, Beverly; H. E. Sears, Beverly; G. A. Stickney, Beverly; S. W. Mooring, Gloucester.

Canadian Army: W. G. Shepard, Lynn.

U. S. Navy Medical Corps: J. R. White, Lynn.

U. S. Navy Medical Reserve Corps: G. W. Eastman, Lynn; R. W. Mathes, Lynn; L. R. Chisholm, Salem.

List subject to correction

H. P. BENNETT, *Secretary*.

FRANKLIN DISTRICT MEDICAL SOCIETY.—The regular bi-monthly meeting was held at the Mansion House, Greenfield, on November 13, at 11.15 o'clock. Program: "Impressions from the Western Front," by Dr. Philip Kilroy of Springfield.

Dr. J. B. Blake of the State Committee, Council of National Defense, was present and made an address.

H. N. HOWE, M.D., *President*,
F. A. MILLETT, M.D., *Secretary*.

SUFFOLK DISTRICT MEDICAL SOCIETY.—President Vickery has appointed the following committees from Suffolk District:

Committee to consider the question of relief of families of medical men in the service: Chairman, Dr. Henry Jackson, Dr. Gerald Blake, Dr. G. S. C. Badger, Dr. T. W. Harmer.

Committee to study methods of reëducation of disabled individuals and the results attained in this direction: Chairman, Dr. Frederic J. Cotton, Dr. Andrew Cornwall, Dr. E. H. Risley, Dr. Otto Hermann, Dr. Robert Soutter, Dr. W. E. Paul, Dr. Lloyd Brown, Dr. H. F. Day, Dr. R. H. Vose, Miss Ida Cannon.

GILBERT SMITH, *Secretary*.

Obituary.

SILAS DEAN PRESBREY, M.D.

DR. S. D. PRESBREY, an ex-president of the Massachusetts Medical Society, died at his home in Taunton, October 23, 1917.

Silas Dean Presbrey was born in Taunton Oct. 19, 1838. He was educated in the public schools of Taunton and at Harvard College, from which he was graduated in the Class of 1860. He took high rank in scholarship and was elected a member of the Phi Beta Kappa. Later—in 1863—he received the degree of A.M. from Harvard.

Choosing medicine as his profession, he entered the Harvard Medical School where he graduated in 1865.

Dr. Presbrey served as resident undergraduate physician at Tewksbury in 1864-65, and then returned to Taunton to enter upon his life work as a general practitioner of medicine. Here he was appointed city physician—the first holder of that office.

In July, 1877, he was made a medical examiner and filled that position faithfully and conscientiously until recent years when he was obliged to relinquish it because of failing health. He was one of the founders, and, at one time, president of the Massachusetts Medico-Legal Society.

Dr. Presbrey became a member of the Massachusetts Medical Society in 1865, and was always an indefatigable worker in its interests.

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† Enlistment expired.

In his mind no physician measured up to the right standard unless he attended all the meetings of the Society to which he had rightful access. As a member of the Committee on State and National Legislation, Dr. Presbrey gave largely of his time and influence. His election as President of the Massachusetts Medical Society, in 1908, came to him as a grateful recognition of his services to this Society, and was always regarded by him as the highest honor of his long professional life.

He was also, for many years, a member of the American Medical Association and of the American Academy of Medicine, of which he was, at one period, a Vice-President.

In addition to the absorbing demands of a large practice, Dr. Presbrey made opportunity for many local activities of substantial value. During his medical studies he served for a time as principal of the Taunton High School. Here he elaborated his knowledge of the classics so well founded while at Harvard, and to his later years he delighted in his recollections of Latin and Greek, always maintaining that on them was built the structure of all adequate education.

From 1876 until his death he was a member of the Board of Water Commissioners of the City of Taunton, administering a political office in common with his associates, in such manner that there has been only praise for the conduct of that office.

As to many physicians in the smaller communities, there came to him membership upon the School Committee for many years.

He was a thirty-second degree Mason.

In 1888 Dr. Presbrey was instrumental in the founding of Morton Hospital, Taunton, and served as the president of its board of trustees until impaired health forced his retirement a few years ago. He was at first visiting, and later, consulting, physician to that institution, and through the influence of his strong personality, did much to elevate the professional standard both for his associates on the staff and for the many nurses who came under his instruction.

Devoted as he was to the exacting tasks of a general practice, Dr. Presbrey was wise enough to take the relaxation and rest of an occasional vacation. He was a good shot, but in fishing he found the greater pleasure.

A keen observer of men and things, through extensive travel both on this continent and across the sea, he enriched his knowledge and stored up experiences that he looked back upon with great satisfaction, particularly when lessened vision shut him off, in a measure, from many of his activities.

On Oct. 1, 1863, Dr. Presbrey married Sarah Williams Briggs, who died several years ago. Of the three daughters born to them, one died while a junior at Smith College; the other two have been the thoughtful comrades of their father to the end.

Dr. Presbrey was a man of fine ideals. He impressed himself upon his generation, whether practising his profession or meeting men in the various affairs of life. His standards were fixed high and he lived up to them. More than that, he expected equally high standards from his associates in the profession and he made his demand known with no uncertain voice.

Many a physician, often, perhaps, without the knowledge, has been kept true through the influence of his upright example.

May that influence long endure as he rests from his labors!

ARTHUR MARTIN CLAPP, M.D.

Arthur Martin Clapp, M.D., was electrocuted while testing a high-frequency coil in his office at Springfield, Mass., Oct. 31, 1917, aged 41 years.

Dr. Clapp had purchased the x-ray apparatus of the late Dr. E. M. Brown, and was testing out the coil when he received approximately 5,000 volts—the full load of the street line connection.

He was a native of Northampton, the son of Martin L. and Frances A. Clapp, and was born March 1, 1876. Going to school in Northampton, he went on to Amherst College and graduated in 1898. Then he studied medicine at the Albany Medical College and at Harvard Medical School, receiving his M.D. from the latter in 1902. After serving as interne at the Springfield Hospital, he practised at Ware, Mass., for six months and then settled in Springfield. There he was a member of the staff of the Springfield Hospital and physician to the Hampden County jail. He was a member of the Springfield Academy of Medicine, Springfield Clinical Club, the Massachusetts Medical Society and the American Medical Association.

In 1905 Dr. Clapp married Edith W. Bates of Northampton, and she and one son survive him.

Miscellany.

UNITED STATES CIVIL SERVICE EXAMINATIONS.

December 5, 1917.

MEDICAL INTERNE, ST. ELIZABETH'S HOSPITAL.

The United States Civil Service Commission announces an open competitive examination for medical interne, for both men and women, on December 5, 1917. A vacancy in St. Elizabeth's Hospital, Washington, D. C., at $900 a year, and future vacancies requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The positions are tenable for one year, and pay $75 a month and maintenance. During the year, however, a postgraduate course in mental and neurological diagnostic methods is given, an examination is held, and promotions to the next grade, junior assistant physician, are made. Beyond this there is regular advancement for men whose services are satisfactory. St. Elizabeth's Hospital has over 3,000 patients and about 800 employees to care for. In addition to the general medical practice offered, the scientific opportunities in neurology and psychiatry are unsurpassed.

Applicants must show that they are graduates of a reputable medical college or that they are senior students in such an institution and expect to graduate within six months from the date of this examination. The names of senior students will not be certified for appointment in the event they attain eligibility in the examination until they have furnished proof of actual graduation.

Applicants must not have graduated previous to the year 1915 unless they have been continuously engaged in hospital, laboratory, or research work along the lines of neurology or psychiatry since graduation, which fact must be specifically shown in the application.

Applicants must be unmarried.

Age, 20 years or over on the date of the examination.

No sample questions of this examination will be furnished.

Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Tintypes or proofs will not be accepted.

This examination is open to all citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C. Applications should be properly executed, excluding the medical and county officer's certificates, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. The exact title of the examination, as given at the head of this announcement, should be stated in the application.

PATHOLOGIST (MALE), FREEDMEN'S HOSPITAL.

The United States Civil Service Commission announces an open competitive examination for pathologist, for men only, on December 5, 1917. A vacancy in Freedmen's Hospital, Washington, D. C., at $2,000 a year, and future vacancies requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

As only one application was filed for the examination of October 3, 1917, qualified persons are urged to apply.

Applicants must show that they have had at least one year's experience in a pathological laboratory after graduating from a medical college of recognized standing, and that they are able to make all kinds of pathologic examinations, x-ray included, and reports thereon.

Statements as to training and experience are accepted subject to verification.

Applicants must have reached their twentieth birthday on the date of the examination.

Applicants may be examined at any place at which this examination is held, regardless of their place of residence, and become eligible for appointment to Freedmen's Hospital and other branches of the nonapportioned service; but those desiring to become eligible for appointment in the apportioned service in Washington, D.C., must be examined in the state or territory in which they reside and have been actually domiciled in such state or territory for at least one year previous to the examination, and must have the county officer's certificate in the application form executed.

Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Tintypes or proofs will not be accepted.

This examination is open to all male citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C. Applications should be properly executed, excluding the medical certificate, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. The exact title of the examination, as given at the head of this announcement, should be stated in the application form.

SOCIETY NOTICES.

Boston Medical Library in Conjunction with the Suffolk District Medical Society.—Surgical Section meeting, John Ware Hall, Wednesday, November 21, 1917, at 8.15 p.m. Lieut. Col. Keenan of Montreal, surgeon to the Princess Patricia Regiment, will speak on War Surgery.

Daniel Fiske Jones, *Chairman Surgical Section,*
Wyman Whittemore, *Secretary Surgical Section.*

East Boston Medical Society.—The East Boston Medical Society will meet on Friday night, November 23, at eight o'clock, at Walcott's Hall, Central Square, East Boston.

Dr. Horace E. Bragdon will speak on "Operative Surgery and the General Practitioner" and Dr. James H. Strong will speak on "The Examination of Recruits for Military Service."

Three members of the society are enrolled in the Medical Reserve Corps, Dr. Frank Bishop on active duty, and Drs. Salermo and Schwartz on the waiting list.

Dr. Robert Bonney has been appointed assistant in practical therapeutics at the Boston City Hospital.

The majority of the members of this society are also members of the Massachusetts Medical Society, and extend a cordial invitation for the medical profession to attend the meeting.

J. Danforth Taylor, *Secretary.*

The Norfolk District Medical Society.—A stated meeting of the Society will be held at the Roxbury Masonic Temple, 171 Warren Street, Tuesday, November 27, at 8 p.m.

Business.

Communication: Normal Serum Therapy,
Timothy Leary, M.D., Francis P. McCarthy, M.D.,
Joseph H. Shortell, M.D.

Bradford Kent, M.D., *Secretary.*

Boston Association for the Relief and Control of Tuberculosis.—The fourteenth annual meeting of the Association will be held at 3 Joy Street, on November 22, at 3.30 p.m. Subject: Consumptives' Hospital Department and Industrial Nursing.

RECENT DEATHS.

John Zebulon Currie, M.D., died suddenly of heart disease while in his automobile in Arlington, November 10, 1917, aged 70 years.

He was born in Fredericton, N.B., January 4, 1847; was graduated from Harvard Medical School in 1873, and received a degree from the University of Edinburg in 1874, and S.B. and Ph.D. from the University of New Brunswick. He practised in Fredericton until 1893 when he moved to Cambridge, where he was physician to the Home for Aged People. In New Brunswick he had been chief health officer of the Province and secretary of the board of health. Dr. Currie was a Fellow of the Massachusetts Medical Society and of the American Medical Association. He is survived by his widow and one son.